AMERICAN BEE JOURNAL

Vol. LXX—No. 9 Hamilton, Illinois, September, 1930 Monthly, $1.00 a Year

Slow Down the Band Wagon!

The Elephants Can't Keep Up With the Parade

By Kennith Hawkins

(Being an interview with some thirty beekeeping leaders in as many states who were willing to express themselves quite emphatically, with the understanding that their names were not to be used.)

"ALL beekeepers are peculiar, including my husband," an elderly lady once explained to me. Continuing, she said: "He will spend more than an hour trying to get a worthless swarm of bees out of a tree and then kick if I am five minutes late with breakfast." Does this explain most of the troubles of American beekeeping today? Do we spend too much time on beekeeping trifles?

Have the "leaders" followed the wishes of the beekeeping "loud speakers" and not been leaders enough? While this is a criticism frequently heard (by the writer), I would not set this forth as an especial ill of beekeeping today, for, being personally acquainted with practically every leader in this country, I know they are a fine type of men. No job has been more thankless in the last fifteen years than the leadership of most beekeeping societies. I wonder if much of the trouble hasn't been that the real problems may not have been put before the membership clearly enough. One leader voiced that opinion to me recently.

Another says: "What we need is more frankness and less diplomacy." Of course, there is seldom use in any leader being so frank in condemning 'crank' ideas that he loses his leadership. While there might be a substantial gain in frowning upon crank ideas, much diplomacy would nevertheless have to be used to convince one's membership that the idea was really subservient to other more important principles to be worked out. No doubt more frankness is needed, but diplomacy must accompany it."

Failure to interest the better type of men in honey production is cited by another authority as a necessity lacking today. Of course, there are many fine men engaged in our industry today. We need many more of this type, however. An example is evident in most countries across the Atlantic Ocean, where leaders in science, exploration and government are usually at least honorary officers and members of most beekeepers' associations. Americans are prone to scoff at Europeans in such connections, but we need guidance in our deliberations that men of similar standing in this country could well supply. Can you imagine anyone like President Hoover keeping bees as a hobby or pastime, as the president of at least one European republic and the king of another are reputed to do? Hoover as a beekeeper would make too good campaign ammunition for the Democrats, I fear!

"It is, however, a wholesome thing that state and university men are taking a more active interest in beekeeping in this country the last decade," an eastern man says. He is right. A few years back it was policy to make fun of the "white collar" beekeeper, but he holds more nearly the position deserved today. In this connection this same man, who comes from a commercial honey-producing state, says: "I begin to feel that the commercial producers are often more apt to criticize than the little fellow. They should help much more than they do."

Another western leader says: "We in state work need to know more of what is going on in other states in our line of work. The bee journals should report this more at length instead of devoting so much space to a picture of an apiary because the man bought a $50 order of bee supplies." Lack of information is a great handicap, and this very lack tends to bring about a division of thought and action, especially within a state where the beekeepers do not have enough contact. This is reported to be particularly true where mountain ranges divide a state geographically and hinder frequent contact.

One of the most flagrant examples of an idea persisted in which had divided states and brought about untold interruption in consistent laws is the shipment of bees on combs. The writer holds no brief for or against. However, to quote a southern leader: "This insistence has caused more trouble than any one idea that comes to my mind. I would rather receive bees shipped on combs, but in the face of law after law passed by states, both north and south, against the danger of spreading disease this way, I have been willing to forego my own personal desires for what seemed the greatest good to the greatest number."

It is interesting to note that there are authentic cases, I believe, where disease has evidently been spread by the shipment of bees in combless packages, where shipper and receiver were too near each other. However, no one can hold out successfully against a majority.

"One often hears honey producers complaining because they get so little help," says a Texas leader. He continues: "I know of no more evident failure of beekeepers to take help

offered than their failure to use the printed matter featuring honey put out by the Kellogg Company. Mr. Freeman, advertising manager of the Kellogg Company, tells me he has hundreds of printed recipe booklets featuring honey, free for the asking, yet few are asked for." Modesty may have caused honey producers to hesitate to accept Mr. Freeman's offer, but most of us are not modest when something good is offered for nothing. This case is hard to explain.

No more lack of unanimity is evident than the variations recommended in bee disease treatment, according to an Ohio leader. Another says: "One state says souse 'em up and down in the rain barrel; another says shake the liver out of 'em, and still another says burn 'em up. It leaves the beekeeper with the impression that most of the advice may have been given before proven and, as a consequence, he uses his own ideas or, more often, does nothing at all." This is too true.

There have been disease "cures" advocated in recent years where an opportunity arose to make capital of the advocacy, when later it was found the method was safe only in the hands of the expert. Of course, nothing should be recommended unless it is safe for the amateur, and the professional will then take care of himself. Where is our association of apiary inspectors?

However, the most pertinent fact is that there seems to be no agreement among the state leaders as to the best treatment for American foulbrood, despite opportunity to remold existing laws with the help of the "rank and file" waiting for leadership. "One thing is that many who in years gone by condemned the fire method may now be found at times shamefacedly 'back of the woodshed' burning up American foulbrood," says a Michigan man. It may be an uneconomic method, just as wholesale slaughter of cattle seemed in the late outbreak of hoof-and-mouth disease in this country, but a real fester upon any industry may only best be treated thoroughly.

No one can say but that acarine disease might have been a serious menace in this country. However, as a southwestern leader points out: "The drastic measures worked out by Dr. Phillips at least forestalled a possible serious danger, which was really serious in the countries where it was endemic. However, he received little thanks and, in fact, was severely criticized by many on the grounds that more ready importation of queenbees from other countries was necessary. All those who really needed queens from other countries have apparently gotten them, the incident is largely forgotten, yet it raised a great hullabaloo at the time. I think this is the most typical example of lack of unanimity in beekeeping.

An eastern man whose name is respected throughout this country in national beekeeping circles cites the lack of any material follow-through by the states or the industry since the promulgation of the national honey grading was, saying: "Before the advent of the national grading rules we beheld commercial concerns making their own grading rules, cooperatives disagreeing and an endless jockeying to gain material advantage for the honey produced in one locality or region. Then along came a reasonable compromise in the form of the national grading rules. Did beekeepers take them to heart? They did not! Nor have they done much with them since, beyond an occasional resolution at an annual meeting commending the national rules. Why should leaders go to the trouble and expense of effecting such real progress as national grading rules and then never even be asked by honey producers how they could use such rules to their own advantage?"

"How many resolutions passed at the last meeting of any beekeepers' association have been followed through?" asks another. "I would like to know how many chairmen of committees have done anything toward carrying out the projects set for them, since they so gracefully accepted a chairmanship." (This borders on the sarcastic.) While busy men away from the excitement of "putting over" a good project are likely to slow up a bit in performance later, isn't it true they should not accept responsibility unless they will carry out the work?

One action taken at the last League meeting which brought almost universal criticism by those the writer interviewed was the place of the next meeting, at Toronto. Many agree that no meeting should be held north of Chicago, none east of Cincinnati, nor west of Kansas City. This opinion is so consistently expressed that it ought to be given consideration at the next meeting. When Toronto was chosen as the place of meeting there was some prophesy that it would be a fine Canadian meeting with few from the U. S. in attendance, except those from border states. However, there is an angle, perhaps overlooked, pointed out by a Wisconsin leader. He says: "At no time have marketing conditions been more serious in the honey industry than now. The strong cooperative in Canada should work more closely with our own cooperatives, and with this end in view Toronto was chosen."

Those interviewed were almost unanimous in citing the recent beeswax tariff agitation as the most conspicuous example of failure of the leaders to consult each other before embarking on a national problem. One easterner says: "Thanks to the candle manufacturers, the tariff was killed. Although many of us worked against it, conflicting arguments from various leaders in beekeeping emasculated our efforts. The proposed tariff was deservedly killed, for while it would possibly benefit some commercial producers, it would impose a duty upon the great majority of amateur beekeepers, who were unrepresented and who buy the bulk of foundation." Without any briefs for either side, it is only fair to report that many others agree most bee journals were conspicuous in their silence during the fight in congressional committee.

"How much better it would have looked to outsiders viewing our industry if the League could have been asked to poll the states and then acted as the one representative of American beekeepers," a beekeeping instructor writes.

All this citation of sentiments voiced readily by leaders in various states shows conclusively a conspicuous failure to cooperate among the leaders. "How may the leaders expect the so-called 'rank and file' to cooperate with such an example set?" says another. Without any brief for the League, but because it is our one existent national organization, one northern writer ventures the opinion that "Beekeeping will make no material progress nationally until the League is recognized by all factions. It must either be recognized or some other national organization formed to replace it, or beekeepers will continue to make themselves conspicuous by acting at cross points on national problems."

"There can be no successful body without a head," says a southeastern leader who has heretofore been lukewarm toward the League.

"The American Honey Institute was organized to complete the work of the national organization. It has no such object as replacing the League. Manufacturers of bee supplies and allied interests are barred from active participation in the League and, tiring of having their money used without representation, decided to have their own organization. Even it has been beset with some differences of opinion, but has at least a record of acting consistently," says another. To quote this enthusiastic correspondent further: "The Institute has been in a position to do much to increase honey uses generally."

However, the Institute is not receiving the financial support of the beekeepers that it should, although it is destined to be turned over to the honey producers themselves when-

(Continued on page 460)

Should Colonies Be Requeened Every Year?

By Alfred H. Pering

YOUR editorial on page 320 of the American Bee Journal for July, 1930, under the caption, "Requeening," contains some mighty good advice. Any reader of your Journal should be well fortified if he takes exceptions to what you say. One hesitates to counter such an authority as the publisher of the leading bee magazine or take issue with an apiarist who handles colonies on such a scale as to be classed with or even above the average commercial honey producer.

It has been many years since the writer owned and operated a sufficient number of colonies of bees to "even have a look in" upon the class of beekeepers who rate themselves as commercial producers or of those who depend upon their bees to produce their "bread and butter" (as well as their honey). Only during one season did I ever own and operate as many as two hundred and a quarter colonies. Since then, fewer colonies and some honey and wax to sell, all the honey we want to eat, and the keen pleasure of **pastime** and **profit,** of varied and numerous experiments, has been "my forte"—so I hesitate.

You say, "Many people advise the replacing of queens with younger ones every year. We cannot agree with this." . . . "Most queens are fully as good in their second year as in their first, and it is giving ourselves unnecessary work to replace them before the second year of laying. In fact, it is exchanging a positive condition for a more or less doubtful one. We know what our queen is and we do not know what the young one will be."

Now, that is all fact. Ever since I learned that the value of a queen was largely dependent upon her ability to lay rapidly and that a queen's age was relative to the number of eggs she had already laid, and not to the number of weeks, months or years she had headed her colony, I say ever since then I have been making some observations, and experiments too, as to a queen's value after her bees had gathered a good crop of honey or surplus honey above the normal number of pounds per colony as stored by the entire apiary.

You say in substance that where a queen has done her full duty the first year the new queen selected to replace her before the end of her second season represents an interrogation point. Yes, but—

Here, in the South, queens can, and many of them do, lay during every month of the year. These queens can easily lay themselves "out" in a year and consequently are worthless for the second, and the beekeeper can be the loser during the period she is slowing down, and, while supersedure is taking place, the beekeeper is pestered too with consequent swarming—supersedure swarms.

A good queen can soon lay herself out even in a ten-frame Langstroth hive here in the South, where the laying season is so long; at least the abnormal rapid layers can. Where the large hive is used, I should regard the queen as "an interrogation point" just as soon as her bees had become so populous as to store a good average crop. I would watch her. I would also watch out for the slowing up of a queen that had "led all the rest" in honey production in any size hive.

Partly as an experiment and to make increase, I have used up a good queen in a single season by giving her empty brood combs in which to lay, and then remove these brood frames and give to weak colonies. Several times have I had the queen give out in her rapid laying when working her strong colony to draw and finish full sheets of foundation, especially if the Modified Dadant frames were used.

In transferring colonies from eight- and ten-frame hives to the Modified Dadant hive I have found it quite convenient to use my best young queen to lay in combs being drawn and to be transferred to colonies being built up for increase. I do not think I overstate it when I say that I think I can cause a good queen to lay herself out in less than six months, especially if that object is sought.

So, in conclusion, while I do not wish to take issue with you as to whether to requeen every year, I would keep an eye out upon queens that had done extraordinarily well—as you say, "interrogation points." This I mean in any locality, north or south. The farther south the more watching. I do not know how far south I would draw the line and then say requeen every year south of that line.

Florida.

The Famous California Lawsuit

By R. B. McCain

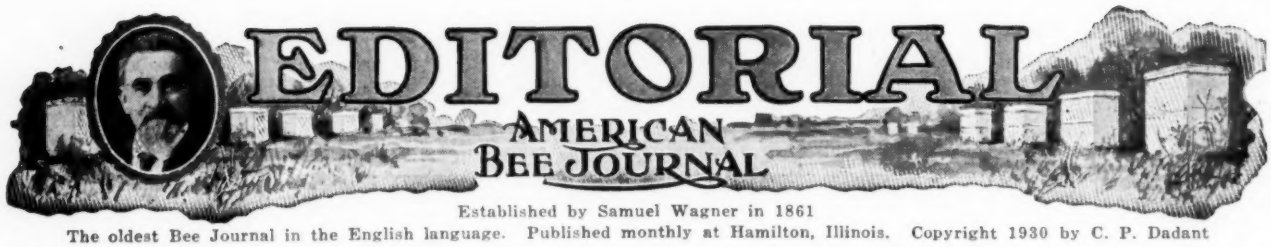
THE long-drawn-out legal battle over some of the provisions of the California bee inspection law has resulted in a decision for John Gray, an attorney, who filed suit in December, 1928, against the inspection authorities of the state and several northern counties for damages on account of the destruction of bees and equipment that were alleged to be infected with foulbrood disease. The court held that, although the constitutionality of the law was not called in question, **the act itself should be interpreted as not allowing forcible burning of bees or equipment where owners are attempting to eradicate the disease.**

Although Gray won his case, the court disallowed part of his claim for damages on the ground that the claim was not collectable in the county where the case was tried. If the claimant desires to obtain damages for the destruction of his bees and equipment from county authorities, he will be obliged to bring suit in each county where the property was destroyed. It is reported that claims for damages aggregated $14,000 and that the cost of the defense to the state and county inspection authorities was more than $500. It is not stated who will be the party to foot this bill, but it is supposed that the taxpayers of the state and counties involved will have to pay it.

Newspapers quoting the county authorities on the outcome of this famous case indicate that there will be an appeal to the higher courts. In the meanwhile the beekeepers of the state of California are wondering when the business of bee inspection will cease to be a fight over methods of treatment and settle down to the real work of eradicating disease according to rational and scientific methods that do not involve unnecessary destruction of valuable property.

Those who sponsored the present law and believed that it would be the means of cleaning up the apiaries of the state now feel that recent decisions of the courts have blasted their hopes. Recent correspondence from prominent beekeepers in the part of the state where these lawsuits were tried reflect a desire for a revision of the law to meet the situation created by these decisions. There could hardly be a doubt that something will have to be done about the mater.

If, as has been decided by the superior court, the present law, by its own terms, permits the use of various methods of treatment, such as shaking, and ties the hands of the inspection authorities at the very point at which they expected the greatest freedom in the use of legal power, the most logical and reasonable thing to do, under the circumstances, is to abandon entirely that method of procedure and find a better way. The time seems ripe for the inauguration of a movement to obtain a law that will put the matter of bee inspection, diagnosis and eradication of brood diseases in the hands of practical beekeepers who are also trained experts in handling these diseases.



Established by Samuel Wagner in 1861

The oldest Bee Journal in the English language. Published monthly at Hamilton, Illinois. Copyright 1930 by C. P. Dadant

Entered as second-class matter at the Postoffice at Hamilton, Illinois.
C. P. Dadant, Editor; Frank C. Pellett and G. H. Cale, Associate Editors; Maurice G. Dadant, Business Manager.

SUBSCRIPTION RATES:

In the United States, Canada and Mexico, $1.00 per year; three years, $2.50. Other foreign countries, postage 25 cents extra per year. All subscriptions are stopped at expiration. Date of expiration is printed on wrapper.

Corn Sugar As It Now Stands

Due to the continued efforts of the corn sugar manufacturers and to the propaganda scattered far and wide by them through the Farm Bureau and other sources, the Secretary of Agriculture, Arthur M. Hyde, granted a hearing to the corn sugar people on July 25. This hearing was for the purpose of securing information to decide whether the regulations governing the pure food law should be so changed that corn sugar might be used like cane and beet sugar in the sweetening of foods without declaration on the label.

This is the point that the corn sugar people have been fighting for and for which they have endeavored to pass laws which would amend the present Pure Food and Drugs Act. Failing in the passage of such laws, the attempt to make a change in the regulations was logically their next and only step.

The hearing before Secretary Hyde was, of course, open to all interested, and at 10 a. m. July 25 five people representing the corn sugar interest were present to argue in favor of a change of the regulations, and about ninety-five people opposing the change in regulations were present to argue against any such change.

E. G. Brown, of the Sioux Honey Association, Sioux City, Iowa, has submitted a comprehensive brief which gives information concerning this hearing in considerable detail, as follows:

"The support of the corn sugar side consisted of the corn sugar manufacturers, the Kansas City Chamber of Commerce, Kansas City Grain Exchange, representative of the National Farm Bureau Federation, and a physician who specializes in infant feeding. The opposition consisted of the National Canners' Association, the National Preserves Association, National Wholesale Grocers, American Honey Producers' League, Bee Industries Association of America, Sioux Honey Association, Iowa State Department, Good Housekeeping, represented by Dr. Eddy; Mrs. Wiley, widow of Dr. Wiley, in the interest of the general public and her husband's life work; the National Society of State Health Commissioners, a Missouri Congressman, a Pennsylvania Congressman, National Society of Sugar Manufacturers, Maryland State Beekeepers, Ohio State Beekeepers, representatives of bee supply manufacturers and publications, and others.

"The corn sugar arguments were presented in a brief which contained the same claims and arguments which they have used in their unsuccessful attempts to get legislation passed in their favor. Many of these claims were refuted by the testimony given by the opposing side. An outstanding feature was that there were no users of corn sugar present to plead in its favor.

"The Kansas City organizations were pleading in its favor because of the splendid corn market the Kansas City plant furnished them.

"The physician's arguments were statements of his success in the use of glucose in infant feeding. While his talk was a good argument for the wholesomeness of glucose, or corn sugar, there was nothing in it to support a claim that it should not be labeled and sold for what it was.

"The outstanding points brought out by those opposed to the ruling asked by the corn sugar people were that the pure food law was the property of the consuming public and was not to be tampered with for any commercial or special interests; that corn sugar, while it is a sugar, is not what the canning public wants or expects when they buy sugar or foods prepared with sugar; that corn sugar cannot be successfully used in many of the places where the manufacturers claimed it could be used. Dr. Bigelow, of the National Canners' Association laboratories, gave testimony showing that corn sugar shrunk and toughened some fruits, and darkened, shrunk and toughened peas. He had three samples of corn which showed conclusively the ill effects of its use in canned corn. One sample was of corn canned with the regular formula of a common sugar (cane or beet); another with the same amount of corn sugar, and the third with twice the amount of corn sugar in order to obtain the required sweetness. The one with common sugar was white and strictly fancy quality. The one with an equal amount of corn sugar was darkened in color and slightly bitter in taste and lacking in sweetness. The sample with twice the amount of corn sugar to obtain the required sweetness was very brown, with very noticeably bitter flavor.

"The wholesale grocers claimed that it would greatly disrupt the present standards and create unfair and unjust competition, and supported the contention with many logical arguments. The Pure Food Department spokesman claimed that such a ruling would be a breaking down of the pure food law and open the way for many other similar claims.

"Before the hearing closed, a malt sugar representative appeared with a sample of malt sugar and a brief supporting his claim to a ruling favoring a like concession for malt sugar.

"There was also testimony showing that corn sugar could not be used satisfactorily by bakers in making cakes and cookies.

"That it was detrimental to the manufacture of carbonated beverages.

"That the meat packers are not using it.

"That it is not generally used by the makers of high-grade ice cream.

"The question was also raised as to what per cent of the quantities of corn sugar produced went into legitimate manufacturing work and what per cent was used in the manufacture of illicit liquor. The belief was expressed that 50 per cent was used for the latter purpose.

"There were also beliefs expressed that the support of the Farm Bureau was worked from the top down and that it did not come from the general membership.

"Another noticeable feature was that there were no other farm organizations supporting the corn sugar people."

No decision was, of course, reached by Secretary Hyde, as he took the case under advisement. However, through the efforts of Dr. Bigelow, of the National Canners' Association, an audience with President Hoover was secured and the facts relating to the corn sugar proposition and the grave danger to the entire food industry were laid before him by the committee with Dr. Bigelow as its chairman. No action was taken by President Hoover, but the entire matter was no doubt referred back to the Secretary of Agriculture.

While a very good showing has been made by the beekeepers and others interested in seeing the Pure Food and Drugs Act upheld, no one knows at the present time what the decision of Secretary Hyde will be. Information from the office of the Secretary to the American Bee Journal office indicates that Secretary Hyde is giving the matter careful study and is going over all of the data, briefs, and statements which were filed in the matter of the proposed change in the administrative position relative to the use of corn sugar in manufacturing food products without label declarations. The American Bee Journal is advised that if any change in administrative position is decided upon, public announcements of the fact will be made.

Sweets in the Diet

On page 444 of this number, Dr. P. Mabel Nelson, of the Department of Foods and Nutrition, Iowa State College, has an inclusive and authoritative article on the place of sweets in the diet which stresses the position of honey in nutrition. Read it carefully.

It gives many facts about the use of honey which may not only be of advantage in disposing of honey, but which add much to our understanding of the part that this sweet plays in the diet. It particularly emphasizes the use of honey as an easily digested carbohydrate, in medicine and in the physical endurance so necessary in athletic events. The effect of an excessive carbohydrate diet is well brought out. The natural advice, of course, is to use natural sugars, of which honey is undoubtedly the favorite.

Raise Plenty of Bees for Winter

We want to remind our beekeepers of the necessity of raising plenty of young bees for winter. September is the proper time to do this, although they do it as early as August in the northern sections. If we have plenty of young bees at the beginning of winter, and a sufficient amount of food, our bees will be in the very best condition for standing the cold weather.

When queens are two years old, they need to be replaced, and September is a good season in which to do it, if you buy your queens from reliable dealers.

Be sure and leave plenty of healthy honey in the brood chambers. Fruit juice, which is sometimes harvested by the bees in late fall, is very detrimental to their success in wintering. The same might be said of honeydew. It will pay to remove these honey substitutes and feed sugar syrup in place of them. But it is still better to have good honey, well sealed, right above the cluster in the brood chamber. We like deep-frame hives, like the Modified Dadant, because there is considerably more honey stored in them above the cluster, so that the bees usually do not have to move their cluster to find food. Two-story Langstroth hives will do, but the space between the stories sometimes helps the heat of the cluster to escape. That is why we prefer single stories of greater depth.

Honey Candy

Of late considerable interest has been manifested in honey as an ingredient of candy. Several different firms are putting out one or more kinds of honey-candy.

The products of the Honeyheart Candy Company of Helena, Montana, have recently been brought to our attention. This concern manufactures about twenty-five different kinds of candy, all made from honey. The advertising stresses the fact that this kind of candy is new and it is different. In these days when everybody is seeking novelty, this is an important element in the success of a new venture.

With the development of honey-candies in several cities where the makers do not come into direct competition with each other, there is a prospect that the business will prove profitable and at the same time furnish an outlet for a considerable amount of honey in a hitherto neglected field. We wish a large measure of success to the manufacturers of such products.

The New Field Station

At the recent session, Congress appropriated funds for the establishment of a field station for the study of bee culture on the Pacific Coast. The location has not yet been chosen, but it will probably be somewhere in California.

With the stations already established at Laramie, Wyoming, and Baton Rouge, Louisiana, we should have ample provision for the study of practical beekeeping problems.

It is only during recent years that bee culture has received the attention which serves to establish an industry rather than a mere hobby or fad. When J. I. Hambleton was placed in charge of the office of bee culture he set out to secure recognition for the industry equal to that accorded to other agricultural enterprises. He has a vision of honey production as a business which will stand on its own resources and provide all the modern comforts of life to those who depend upon it. While not neglecting the scientific problems, he is giving special attention to those things which add to the income of the man who lives from the products of the apiary. The work of the field stations as well as of the Washington office has a very practical application.

There are numerous problems which are more or less local in their nature, and it is these that the field stations are designed to study. The southern field station is giving especial attention to the shipping of package bees. The problems of the live bee shipper are by no means all solved.

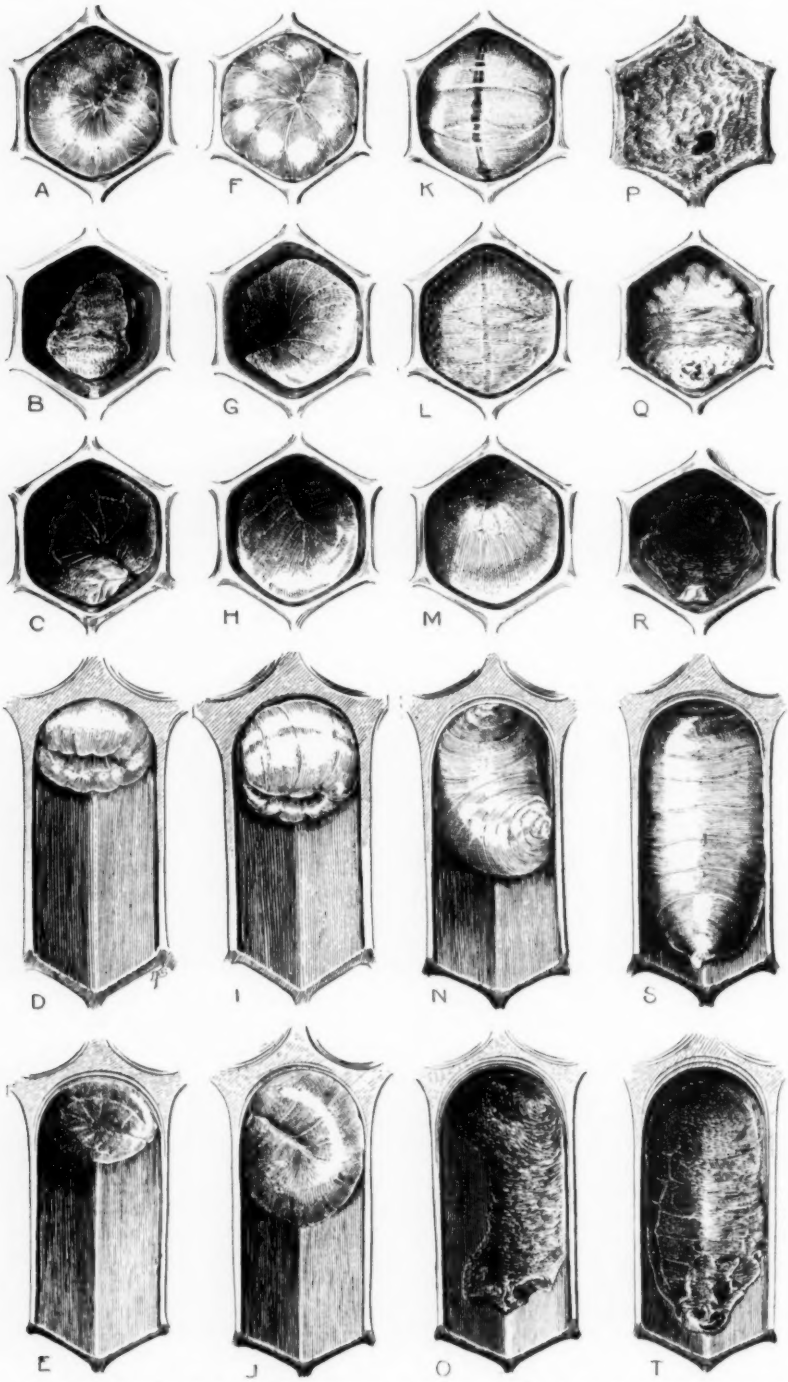
Cornering the Microbes of the Apiary—Part Four

By H. F. Wilson and G. E. Marvin

Bacteria

BACTERIA are single-celled plants capable of growth and reproduction. The substance of each cell consists of a cell wall or membrane surrounding the living matter or cell contents.

The cell contents consist of an outer layer just inside the protective wall and an inner liquid material containing protoplasm—various granular substances and oil globules. Many bacteria have the power of motion when in suspension in a suitable liquid. This motile power is provided by one or more delicate hairs attached to the cell wall.



European foulbrood, showing appearance of cells. From A to M uncapped, and from N to T capped brood; D, healthy larva at the earliest age at which symptoms of the disease appears; A E, young larvæ showing symptoms of European foulbrood; B O, larvæ partially removed by the adult bees; C, scales from young larva; F I, healthy larvæ somewhat older than D. G H J, dead larvæ of the same age as F and I; K, healthy larvæ slightly older than F, with dorsal side turned toward the observer; L M, dead larvæ about the same age as K; N, larva dead at the time of spinning; O, scale of a larva similar to N; P, a punctured cap; Q R S T, larvæ which had assumed the endwise position in the cell before death; Q, larva partially removed; S, larva dead of the disease; R T, end and ventral view, respectively, of European foulbrood scales of larvæ of the age shown in S. These scales and those of American foulbrood are quite alike. The caps from N O Q R S and T were removed by the adult bees.

Reproduction of Bacteria

All bacteria multiply by a process of cell division—that is, a divisional wall forms through the middle of the cell, forming two cells, and each of these parts then takes on the shape and size of the original cell. Some bacteria are capable of producing special cells called spores, and these cells are particularly adapted to resist adverse conditions of heat, cold and drought. These spore cells may remain alive for a period of years and readily develop into mature cells when introduced into favorable growing conditions. The bacterium which causes American foulbrood is one of this type.

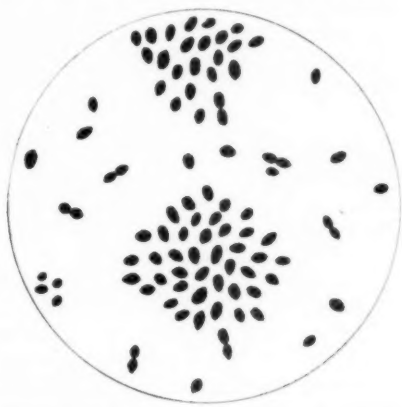
Bacteria are usually of four different shapes—round, rod-like, spiral and filament-like. They may occur singly, in pairs, chains or masses, according to their characteristics of growth and the material containing them.

They measure in length from 1/2500 to 1/50,000 part of an inch, and it is therefore quite easy to understand that many millions of bacteria or spores can occur in a single diseased bee larva.

Distribution of Bacteria

Bacteria are more abundant in nature than either yeasts or molds, and they occur in all parts of the earth, in the air and in surface soil. Their abundance is easily realized when we remember how easily milk sours and foods decay unless sterilized and protected from the air.

Bacteria are more abundant in the soil than in the air, and most of them



Bacillus pluton, the bacterium which causes European foulbrood

are beneficial in bringing about conditions that are favorable for the growth of other plants. They decompose the dead plant tissues in the soil and convert them into compounds easily taken up by the roots of other plants. They are commonly found in open water, and disease bacteria are therefore likely to be quite common in lakes and rivers polluted by sewage. They are also common in or on most foods, but only those that cause specific diseases are dangerous.

How Bacteria Are Scattered

Bacteria are easily scattered by air currents, by insects and animals and by the transportation of substances in which the bacteria grow. It is well known that many different bacteria can be found in the mouth and digestive tract at all times, but are harmless unless introduced through a wound in the lining of the stomach.

Types of Bacteria

1. Harmful Bacteria—Bacteria of this class are those that cause human and animal diseases, and others that cause souring of milk, the decay of vegetables, meat and other food products. Milk is a first-class food for all sorts of bacteria and affords an excellent source for the distribution of tuberculosis, typhoid fever and septic sore throat. Most of our human and animal diseases are caused by bacteria, and they are therefore among the most dangerous enemies of the human race.

2. Beneficial Bacteria—Bacteria of this class are much more numerous than the harmful species and are necessary for the production of many types of food. Starters for butter making and cultures for ripening cheese are well-known examples. Perhaps the most important of all bacteria are the nitrifying bacteria, which cause the formation of soluble nitrates in the soil in such condition that they can be taken up by the roots of the plants. Another type causes the breaking down of alcohol and vinegar.

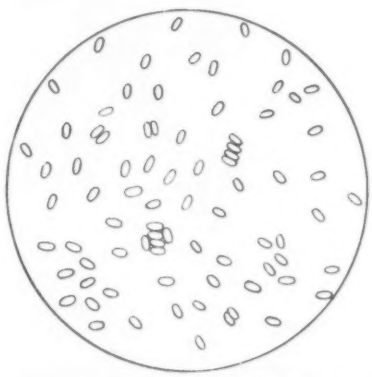
Bacterial Diseases of the Honeybee

There are two principal bacterial diseases of the honeybee in America. One of these is popularly known as "American foulbrood" and the other as "European foulbrood." It does not seem necessary to discuss these two diseases at this time, since they are more or less familiar to nearly every experienced beekeeper. There is an interesting difference, however, between the two bacteria responsible for these diseases.

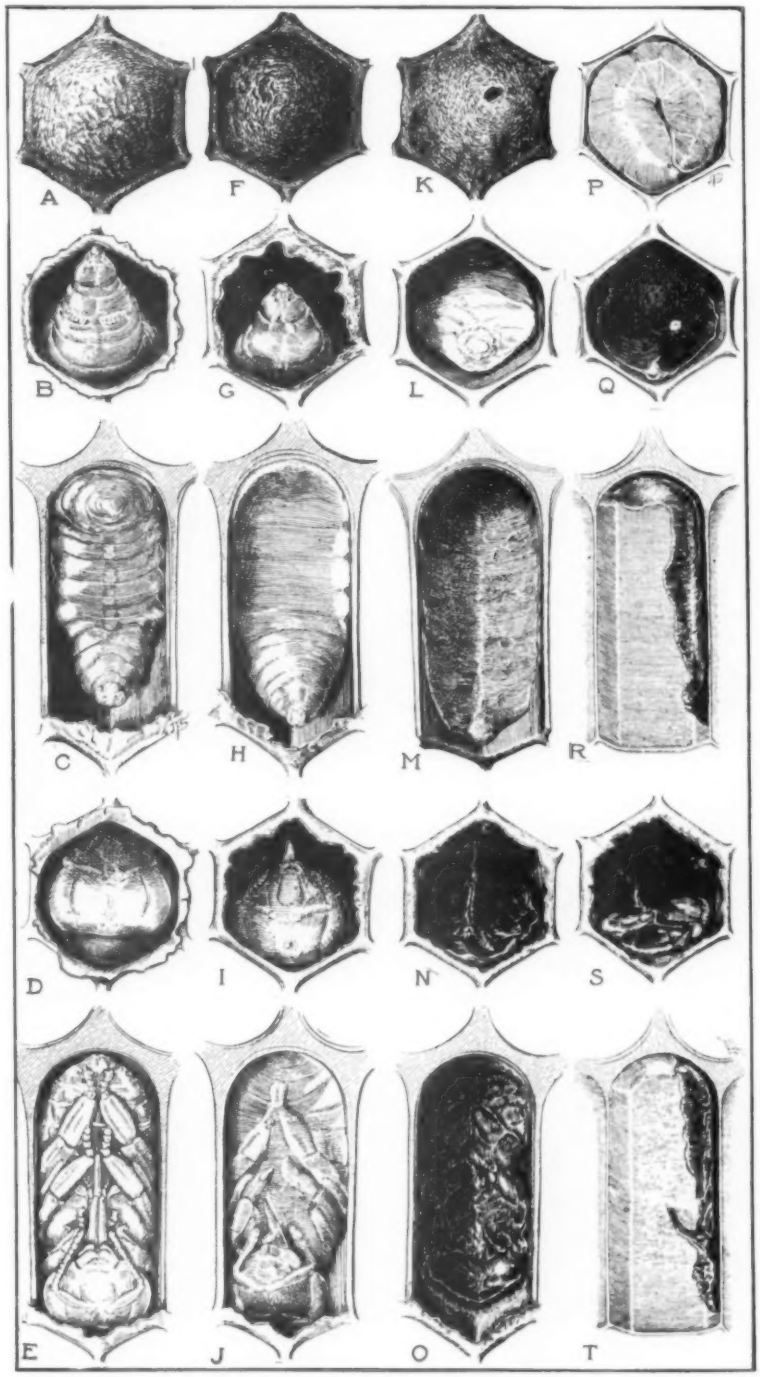
It is a well-known fact that the bacteria of American foulbrood develop spores and that they are able to live indefinitely in unfavorable conditions by means of this stage. European foulbrood is quite different in that, up to the present time, no spore stages have been noticed, and it is not known how the disease is carried over from one season to another.

These two diseases are also peculiar in that American foulbrood cannot be eradicated from a colony when it has once been established, without destruction of the combs and

(Continued on page 455)



The spores of Bacillus larvæ, the bacterium which causes American foulbrood



American foulbrood. A to E healthy, and F to T diseased brood; A, cap over healthy, and F K over diseased brood; G H larvæ and I J pupæ dead of the disease; Q M R, scales of larvæ, R being cut lengthwise, and N O S T pupæ dead of the disease, T being cut lengthwise; K, a punctured cap; L, a partially removed larva which died of American foulbrood before reaching the age at which brood is capped. This occurs only occasionally.

The Pinch-Trap Flowers of Milkweed

By William M. Harlow, New York State College of Forestry, Syracuse, New York

FIVE tiny, narrow slits, each flanked by a waxen, nectar-bearing cup—and you have in the common milkweed one of the most remarkable insect traps to be found among our native flowers. But why should milkweed be so anxious to detain its numerous insect visitors? It is in no sense an "insectivorous" plant, as for instance the sun-dew and pitcher-plant, which to some extent may engulf bodily, unwary insects.

Well, suppose we station ourselves in that patch of sweet-smelling milkweed over there and observe what takes place. The nectar flow happens to be on, and hovering over the heads of blossoms are all sorts of winged sugar seekers—wasps, flies, hornets. Ah! here is a honeybee on this cluster, not two feet from your nose. Don't jump away; she's a nice yellow three-banded Italian bee and probably quite gentle. Anyway, she has much more important business than chasing you, provided, of course, that you don't molest her. If you will look closer you will see a glistening drop of nectar at the bottom of each cup, and into one of these the bee eagerly plunges her tongue. But meantime her six legs have sought support and some of her clawed feet have come to rest near the bases of several "pinch-traps" all ready for action. Now as she drains the last cup of its sugary bait and rises humming from the flower, the claw on one of her feet slides up along the groove of the trap and catches at the top in a minute knob which you will see appears as a black dot. She is caught, hard and fast, and buzzes and struggles violently to get away.

Beautiful milkweed, rich in nectar, sweet with scent, and a powerful attraction to bees.

The pinch-trap claims a victim. A honeybee with two feet caught

Suddenly the imprisoned foot is wrenched free, and if you are quick enough you will see that the black dot has been torn from the flower and that to it are attached two, previously hidden, pear-shaped appendages which remind one very much of a pair of tiny yellow water wings. Having seen this exhibition, if you put two and two together, you will begin to suspect that the whole performance has something to do with pollination. Suppose we remove one of these interesting structures, which is easy enough with the point of a needle, and examine it with the microscope. Our suspicions are borne out, for the yellow water wings turn out to be waxy masses of pollen held together at the ends by a strong, black, slitted knob, the ultimate pinch-trap which we saw in operation.

However, this is only half of the show, since we must now return to the milkweed patch and find out how the pollen is caught by some other flower. Several bees are traveling from head to head and this bee over here will answer. Do you see how clumsy she looks? She has been working milkweed for some time and has a regular string of pollinia (the pear-shaped pollen masses) on nearly every foot. Also, she is an "old" (six to eight weeks in summer) bee and her wings are getting frayed. There, she is fast by two legs and is beating her weakening wings to get free. Suppose we give her a lift and meantime watch the pollinia. The ones already on her feet have been drawn up, are partially lodged in the slit and as she escapes they break off, while those of this flower are carried away at the end of the string. (See illustration.)

From the standpoint of the plant, this is about all there is to the unusual story, but on the insect side more remains to be told. As you may have surmised, if an old, "feeble" bee happens to get two or more legs caught at once, she is quite liable to stay permanently, and perhaps dies a painless death. Common flies, being weaker than honeybees, may often be found hopelessly entangled. If you are fortunate enough to own bees, you can always tell when they are working milkweed by these

Photomicrograph of a bee and attached pollinia (pollen masses) magnified ten times. This bee had freed herself from at least nine flowers, as shown by the nine black pinch-traps. No wonder she finally got stalled with such a handicap.

The yellow water-wings. A close-up, magnified ten times, of a single pollinium. Note the black, grooved knob,—pinch-trap—at the top.

strings of yellow pollen masses. As the bee hits the alighting board of the hive, she seems to lack traction and slips and slides along in a very ludicrous way. Just incidentally, milkweed, although classed as a "noxious weed," may be a valuable honey plant, and in some sections is a very good friend of the beekeeper.

Honey-Bee Whole Wheat Flakes, a New Cereal

The Dwarfies Corporation of Council Bluffs, Iowa, makers of Dwarfies, a whole wheat breakfast food, with a large distribution on the Middle West market, have recently placed a ready cooked whole wheat breakfast food on the market, known as Honey-Bee Whole Wheat Flakes. These flakes are actually cooked in honey and toasted. The distribution, so far, is largely in the states of South Dakota, North Dakota, Iowa, Nebraska, Kansas, Missouri, Quincy (Illinois), and a northern strip of Oklahoma. It is hoped next year to increase the distribution considerably.

In making the cereal, honey is used for two main reasons: (1) the nutritional value of the honey, and (2) the fact that this value is recognized by the consumer. Honey, being what it is, has a fine appeal.

The publicity being given to honey by this cereal brings the product to the attention of many people. About 3 per cent honey is used in making the flakes. The publicity covers newspapers, radio, window display, and so on, all through the Midwest territory, and probably it will result in the consumption of a good deal of honey through this source and through the advertising carried by the product.

Beekeepers who are interested are suggested to send to the Dwarfies Corporation, Council Bluffs, Iowa, for a sample box of the new Honey-Bee Whole Wheat Flakes made with honey. It is 10 cents per box. Send along 15 cents to cover the cost of mailing. We are not suggesting this as free advertising for the Dwarfies Corporation, but because we believe we should give them a boost in their efforts to help the honey business. Get your local grocer to consider the handling of Dwarfies and of Honey-Bee Whole Wheat Flakes.

Early Crop Forecast in California Not Sustained by Results

Some of the weather prophets and crop forecasters of the West allowed their desires and hopes to be the parents of their thoughts. Aside from the fact that no one knows very much about the weather, anywhere, until after it has happened, it is especially dangerous for weather prophets to practice their profession in California. Pioneers and native sons leave the forecasting business to tenderfeet. The old-timer waits until it is all over, and then has nothing to say.

Conditions in the apiaries throughout California were never better than just prior to the time when the honeyflow should begin. Early spring flowers were abundant. In the eucalyptus regions this was especially so. Hives were boiling over with bees. Surely, if ever, this was to have been a good year for the beekeeper. But the chain of efficient cause broke at the crucial point. When the time came for the harvest of a crop of honey, there was no crop to harvest. Those who yielded to the temptation to plunge lost.

Looking back, the wonder now is that anyone should have been deceived. The amount of rainfall during the rainy season determines the amount of the honeyflow. The rain gauge tells the story. No matter what the surface conditions may be, if there is not a sufficient amount of water stored in the ground far in advance of the time when honey should flow, there will be no crop. There was not only a shortage of rain during the last rainy seasno, but there has been a similar condition through a long series of years. In the localities that depend entirely on the natural rainfall, the ground has no reserve of moisture. Moreover, the underground water level has been greatly lowered by the continuous pumping of water for irrigation. On account of these conditions, vegetation has suffered a setback in growth and development. Nothing short of a series of very wet years will bring about a reversal of these conditions so that a normal crop of choice sage honey can be produced.

This is a pessimistic view, no doubt, but it ought to contain a hint to those who indulge in early crop forecasts. The producer always gets the butt end of every deal, anyway, and the only result of a too rosy-hued forecast is to beat down the price of honey. When crop conditions are unusually good, the best place for that fact to be shown is in the producer's bank account. R. B. M.

Prominent Colorado Beekeeper Passes Away

Philip McCoy Large

Philip McCoy Large passed from this life July 28, 1930. He was born in Zanesville, Ohio, November 14, 1840, of Irish parents. He served in the Illinois infantry in the Civil War for nearly five years.

He came to Colorado in 1890 and took up beekeeping. Was a member of the Colorado Honey Producers' Association. Those possessing a volume of the 1903 "A B C of Bee Culture" will find a picture of a solar wax extractor with artificial heat attachment devised by Mr. Large (plate 16, page 451). Advanced age caused him to sell his bees in 1922.

His ready wit and kind disposition attracted many friends. He is survived by his wife, Mrs. Maria Large, and one daughter, Mrs. V. R. Pennock. The picture of Mr. Large which is shown here was taken about a month before his death.

Political Ways Are Strange

Senator Tydings, of Maryland, is reported with the following sage observation:

"People are not eating as much molasses now as they formerly ate. Because they have more money, they are eating honey, refined syrups of one kind or another—maple syrup—and where the old staple breakfast product was molasses twenty-four years ago, we have graduated into more refined sweetening."

First time we knew that honey was classified as a "refined syrup."

G. P. D.

Plenty of Room Helps

I keep my bees three miles out in the country and see them about twice a week, so I must have a hive with plenty of room and little or no swarming. Of course, I have pollen-clogged combs, burr-combs, and get stung once in a while, but I use the Modified Dadant hive and the cost per pound of honey in work and grief is much reduced thereby, and I certainly do not get stung on the honey crop.

Roy E. Trunk, Minnesota.

The Apiary of the Dominion Experimental Farm, Agassiz, British Columbia, where the experiments described herein were carried out

Milk - Fed Bees

By J. W. Winson

So many other creatures—children, cubs and chicks—now acknowledge the cow to be their foster mother that perhaps bee men will not be very startled to learn that milk may be fed to bee brood. The discovery has been made by Mr. James Fraser, who is in charge of the sixty-colonied apiary at the Dominion Experimental Farm, Agassiz, British Columbia.

Mr. Fraser felt that rye flour and pea flour substitutes for pollen were not thoroughly efficient. The Agassiz farm contains a notable herd of Holstein cows, and the virtues of their milk are kept before the public. Knowing there was some similarity between the protein content of milk and that of pollen, Mr. Fraser determined to make a test last year.

On May 14, 1929, he took two similar nuclei from one hive and introduced two imported queens, apparently of equal vigor. To the "check" he fed ordinary sugar syrup. For the other he used new milk, fresh and warm, with the sugar stirred in, and fed equal amounts with the check. Desiring to give the bees only what they would consume readily, he fed one pound of syrup every other day.

By June 28, when feeding ceased, the check nucleus had three frames of brood. The mature bees were covering six frames. The nucleus fed milk and sugar had at the same date eight frames of brood and they were covering thirteen frames with mature bees.

So much has been said, pro and con, about the use of pollen substitutes that we are glad to publish experimental evidence which tends to show that milk has a protein value quite similar to pollen. It is a possible solution where pollen shortage is a serious matter.

Mr. James Fraser, of the Dominion Experimental Apiary, opening a milk-fed colony on June 19.

As this result was greater than expectations, Mr. Fraser did not report it, but decided to see what would happen another season.

This year, on April 29, two nuclei were taken from one hive and an imported queen given to each. To the one, ordinary syrup was fed; to the other, the same amount of sugar mixed with new milk.

When we examined these on June 19 the "check" colony had four frames of brood, the bees covering six frames. The "Holstein" bees had nine frames of brood and thirteen frames were covered by bees—a super had become necessary.

The milk mixture, of course, was milky in the feeder. When stored in the cells it was brown, but murky, having somewhat the appearance of buckwheat honey. No odor or sourness could be detected at any time. At first the bees took down the milk and sugar reluctantly each year, but after they had become accustomed to the flavor they were very eager to get at the "bottle."

The experimental farm experts hesitate to announce these results before a longer series of experiments have been made. They want to know the chemical content of the stored syrup and whether the milk-fed bees are in every way as good as the others; what other proportions might be used, and whether it may be fed earlier to induce early brood rearing. But enough has been demonstrated to prove that milk is a good "feed"—better than flour, better than natural pollen, in times of scarcity at least.

A Glimpse of the Honey Market

By Charles Brittain, Manager the Pacific Slope Honey Company
(A letter sent to members of the Western Washington Beekeepers' Association)

DURING the war-time period, with honey selling readily at 20 cents per pound, the demand for honey exceeded the supply. This is proved by the fact that in 1920, in addition to our own production, we imported eleven million pounds of honey. These conditions created an interest in honey production, and a great many beekeepers extended their credit to the limit in buying bee supplies. After the investment was made there came a big slump in prices in 1921. Beekeepers put forth their best efforts to produce larger crops, thereby lowering their cost of production so they might be able to meet lower prices. Increased production served only to throw supply and demand even further out of balance.

It is true that many beekeepers who went into honey production during the war-time period of inflation have quit. We must remember that the equipment is being used by better beekeepers and during the past few years we have had from ten to twelve million pounds of surplus honey in the United States. (The total is much above that.—Editor.) Many large centers of population that were buying carloads of honey a few years ago are now being supplied by nearby producers who formerly did not exist. The increased production in the west central states has kept the Chicago market over-supplied to such an extent that Chicago as well as many smaller cities have been closed to western beekeepers.

Well-ripened extracted honey is not perishable and may be held over from one year to another, but, owing to financial obligations, many beekeepers have been compelled to realize on their crops, with the result that markets have been over-supplied at lower and lower prices. Beekeepers are not the only people that are feeling the period of difficult times, and it is apparent that the future holds better prospects for marketing honey than for many other products.

In 1926 a large number of cars of good quality honey were forced on the eastern market at prices ranging from 7 cents down to 4 cents per pound. In 1927 the Mountain States Honey Producers' Association organized a large pool of honey and, by working through honey exporters, was able to find foreign outlets, which brought about much better domestic prices. In the spring of 1929, for the first time since 1921, practically all of the surplus honey had either been consumed at home or shipped into export. Had it not been for the German tariff which became effective in December, 1929, and the bad industrial conditions following the stock market crash, beekeepers would have seen better prices than for several years. Regardless of the German tariff, which amounts to 7½ cents per pound, the German market and that of the United Kingdom will probably absorb part of our surplus.

With our market crippled by the German tariff, it is imperative for us to develop larger consumption in our domestic market. With the good work that the American Honey Institute and the cooperative associations are doing, we should continue to make progress in reducing our surplus. It is to be hoped that with the return of normal industrial conditions, and with the large honey pools now in the hands of cooperative associations, our domestic market will be more satisfactory than it has been for some time.

Due to unforeseen circumstances since July, 1929, we (The Pacific Slope Honey Company) have had to change our program in order to find markets for our honey. On September 3, 1929, we were successful in increasing our prices to the grocery trade. Under normal conditions this program would have succeeded permanently, but under the rapidly changing circumstances, with all commodity prices rapidly falling, we were forced to drop back to protect our market from outside invasion. We have held our trade with the retail stores regardless of the fact that others have been offering honey for less. Our brands are now well established with an unquestionable reputation for quality.

In periods of depression such as the present, the retail market is of utmost importance to a producers' organization. It is practically impossible to sell BULK honey because commercial honey bottlers will buy where they can buy the cheapest, and if a honey-marketing organization had to rely upon them it could hope to get no more than they could buy for elsewhere. At the present time they are very reluctant to buy carload lots at any price, as the uncertainty of the market makes it undesirable for them to tie up a sum of money on a slow-moving product. The time has passed when beekeepers could sell their honey on their own local market and expect to get any higher returns than the average price elsewhere. Many beekeepers do not realize how closely connected they are with all markets, both foreign and domestic. Low freight rates, especially water rates, now closely link the world markets, and there are representatives in every industrial center making offers to the trade in competition with the products that are produced close at hand.

Under present conditions, with carloads of honey being offered to the trade at lower and lower prices, we are forced to depend almost entirely on developing the retail trade for our brands of packed honey, and we think that this will apply to any market as long as there is a surplus and individuals outside of marketing organizations continue to offer honey to the trade in competition with each other. During the past years we have built up a steady business on certain labels and a reputation for quality which is the result of careful selection of the best honey that runs uniform in flavor and color. We have been able to do this by having a large amount of honey in stock at our bottling plant and seeing to it that all off-flavored honey is not packed as table honey, but is graded out and sold into the bakery and other manufacturing channels.

Individuals and commercial bottlers who handle honey as a sideline haven't the volume of business necessary to permit them to advertise honey. This gives us a decided advantage, as our customers realize that a quality product, properly advertised, will create more sales for them.

There is a certain class of trade that buys on price alone In the past we have neglected this business, which has kept a steady market open for a large number of beekeepers outside of our organization, as well as a steady demand for importations from the Hawaiian Islands. The only incentive for private concerns to pack and sell honey is profit. It makes no difference to them whether the beekeepers are getting cost of production or not. The beekeeping industry has no future under such a haphazard marketing program as long as there is a surplus. Individual competition among unorganized beekeepers will keep prices very low and unsettled, so that private packers cannot afford to buy in large quantities with any assurance of safety on their investment.

Commercial packers will not advertise or push sales in a way that will increase consumption, and advertising is absolutely essential to bring about better conditions for beekeepers. The beekeepers must maintain their own marketing organization in order that a continuous program may be carried on to popularize honey and increase consumption. This will never be accomplished

through individual effort. Unorganized individuals will never contribute enough to do anything effective in a large way.

The NET RETURNS of cooperatives are usually compared with the GROSS SELLING PRICE received by individuals. Individuals have freight costs and marketing expense that actually brings a lower NET return than the cooperatives. Individual sales are made on a competing price level which breaks the market and depresses prices. This is especially true when there is a surplus. If the losses to the producers effected in this way might be used for advertising honey, we would be able to get as high cash returns and at the same time increase consumption so that ultimately we would not have a surplus to weaken prices year after year. We beekeepers must realize that we have a product that requires pushing and wide distribution in order to increase consumption. Ordinary food packers are interested in obtaining neither. Food packers supply demand and retailers stock their shelves with goods that the public requires. It is up to the beekeepers to create a demand for honey, but we cannot do this without a large and efficient organization working 100 per cent in the interests of beekeepers.

In our contact with the trade we meet shrewd buyers for large chain organizations. These buyers are intelligent, trained men who thoroughly understand modern food merchandising. They repeatedly tell us that they are not interested in selling our product unless we make it profitable for them to do so. They tell us that they prefer to sell sugar syrups, jams or jellies in preference to honey because there is a demand for these products, all of which are advertised. They also state that these products repeat, making quick turnover, while honey merely occupies valuable shelf space. Their advice to us is to advertise our product under certain established brands and to put out a uniform product of consistent high quality. They repeatedly tell us in response to our selling efforts:

"If you have such a fine product, why do you not tell the people about it so that we can afford to keep it in our stores and sell it for you?"

They tell us that it is their policy to obtain their goods from reliable manufacturers and packers that can furnish a first-class product the year around on a basis that will return a profit. They state that if we are able to do this, then they will cooperate with us and push honey sales.

Modern success in any endeavor comes about by intelligent and united action by those who are specializing in any one line. To set up an efficient organization that is able to function to the best interests of those whom it serves requires money, time and the very best materials obtainable. The beekeeping industry now has an organization that controls approximately seven million pounds of honey; they also have credit established with the reserve banks that will secure loans up to a conservative estimate of loan values on honey. The credit department of the Federal Reserve Bank system has investigated our organization and is satisfied with the way that the accounts are kept and the obligations cared for. It believes that our marketing program merits success.

A cooperative, like any other business enterprise, has many problems. However, the producers have the source of supply, and if their program is right and is intelligently carried out they are sure to win.

Seattle, Washington.

Some Observations on Wintering and Package Bees

By L. R. Stewart

We like to winter our bees in the smallest space possible, including, of course, sufficient stores. Then in the spring, when the colony gets strong enough, we put on an extra brood chamber, which also is a food chamber. For good wintering and rapid spring development, however, we keep the space as small as practical.

I used to think anyone who advocated killing bees in the fall and replacing with packages in the spring was either crazy or in the package business. I must qualify this statement, however, by localizing it.

According to the best authority, it takes from three to eighteen pounds of honey to winter a colony, depending upon location and method, making a maximum gross cost of $1.80, figuring the honey at 10 cents. In the spring, you have an established colony and a queen that you know is right. A two-pound package (and two pounds is plenty small) will cost $3.00 plus approximately 75 cents for express. You can always depend on the loss of some queens, some mismated, and, what is worse, some that will prove no good. Then you must feed, and feed, and feed. If you get no help from a spring or early summer flow, you do not know how much feeding you will have to do to build your colonies up to 50,000 bees, which is a minimum number for surplus storing.

Let's figure, and remember the figures are the same in Ontario or Texas: A comb of brood produces approximately 5,000 bees, and they say it takes a comb of honey to rear a comb of brood. A standard comb of honey (in this case sugar syrup) weighs something near seven pounds, and a pound of syrup in the comb is equal to a pound of sugar in the sack. So 5,000 bees will cost us seven pounds of sugar, and 50,000 bees will cost us seventy pounds, in addition to labor—and what task in the apiary is more trying than feeding?

Figure your sugar at 5 cents and your package will cost you $7.25. You may, of course, get some natural flow which will lower this cost.

I hear you say the wintered colony will also have to be fed if the package is fed. In my case this is not so. I find the over-wintered colony has a better organized force and is able to gather from the field, while all the package can do is to nurse its brood. My experience has been that the two-pound package does very little field work for about twenty-five days after introduction. And, oh, how they do dwindle! Of course, if there was absolutely nothing in the field, then the old colony would be as badly off as the package.

However, the package has its advantages. They are fine for rapid increase and replacing winter loss. They will also give a good account of themselves in a honeyflow if it is not too early. I have never been able to get one to produce, however, as well as a wintered colony.

There is a difference in packages, and this might be my trouble. However, I will continue wintering, gloating over every colony that comes through in good shape, and replace my loss with packages.

Indiana.

Transferring in November

By George H. Williams

(This is by a boy of 20.—Editor)

A friend told me that what honey his bees made this fall he was going to get. So I asked him if he would give the bees to me. "Yes, sir, I am going to kill them." So on the date given above I took a hive with good brood combs and went over in the afternoon and transferred the bees from the old box-hive and gave him the honey and gave the bees syrup of pure sugar, one part water and two parts sugar, and they went to storing it in combs for winter. A few days later I went to feed them some more syrup and found them doing well, with the combs about half filled with the syrup I had fed, so I fed some more and am going to pack them as soon as they store enough for winter.

I do not say that November is a good time to transfer bees from box-hives, as I prefer spring. But in case of then or never, I say do it. I have transferred a number of colonies at that season of the year and have never lost a single one. But if one has bees of his own, I say wait

till fruit blooming time, for I think it best for the bees.

My way of transferring is by drumming the bees into an empty box by turning the old gum upside down and placing the box over the mouth of the hive, beating the sides with sticks until bees cluster in empty box, then hive on the old stand as a swarm.

Possible Influence of Soil and Flora on Predisposition to Foulbrood

THE editor of **Bitidningen** (Sweden), A. Lundgren, has put forward the suggestion that a deficiency of mineral constituents in the honey of certain locations may be a cause of predisposition to disease. He has remarked that foulbrood is more prevalent in clover than in heather districts. At his request, some analyses of Swedish honeys from locations with various nectar sources were made by T. Sundberg (**Bitidningen**, March). The results are of considerable interest. The ash for analysis was obtained by evaporating and igniting the honey; the chlorine content was determined directly from honey solution, as it is liable to be lost during the process of incineration. The attached table gives the values found, the samples being classified according to their origin from apiaries infected with, or free from, foulbrood. Samples A and B were examined in 1926; Nos. 1-6 in the fall of 1927; the rest in 1928.

Lundgren, in commenting on this table, draws up a comparison of the values obtained by averaging samples 1, 2 and 3 (clover infected) and 7, 8 and 9 (heather, free). This gives:

Constituents of Ash	Infected (Clover)	Free from Disease (Heather)
Chlorine	19.0	16.7
Silicic Acid, insol.	1.2	6.1
Silicic Acid, sol.	3.2	12.9
Phosphorus (P2 O5)	16.4	15.1
Iron Oxide	0.6	0.6
Manganese	0.4	1.9
Calcium	8.7	14.9
Magnesia	3.9	5.9
Potassium	104.7	264.6
Sodium	10.3	13.3

The totals are: Clover, 168.4 mgm. per 100 gm. of honey; heather, 352.0 mgm., or about double the amount of mineral constituents. (This is a small difference compared with some of those given for American honeys by Browne and Young (U. S. Dept. Agr. Bul. No. 110); and it would be interesting to compare the distribution and frequency of foulbrood in the United States with the composition of the honey of the various locations. Comparison of the various items in the table does not appear to support the hypothesis very strongly, since the honey containing the largest quantity of ash was sent in from an infected apiary, while the honey with the smallest quantity of ash came from an uninfected source. These cases may, however, have been due to chance—to the presence of very large amounts of infected material, or to total absence of the disease from the location, respectively; and the hypothesis appears to be deserving of further investigation.

A. D. B.

Causes of Swarming

In the "South African Bee Journal," quoted in "The Bee World" for July, 1930, it is reported that in an apiary of one hundred hives of small size 70 per cent swarmed. In hives of double size only 30 per cent swarmed, and in hives with supers on only 5 per cent swarmed. This agrees with our experience, although there are exceptions to this rule.

Observers of Wax

By E. M. Cole

I notice in the article on page 21 of the January American Bee Journal that you seem to endorse the idea that John Hunter was the discoverer of the origin of wax, meaning the scales of wax on the abdomen of the honeybee, and state that Professor Wheeler "credits Hunter with the discovery of wax, which is usually credited to Huber."

Certainly Huber is the discoverer of the origin of wax as being derived from sweets eaten by the bee; but Huber never claimed the original discovery of the wax scale on the abdomen of the bee.

Huber claims to have discovered the scales of wax in 1793, but credits Hunter with the discovery in 1792. (Dadant's translation, page 110.) He gives still earlier credit to an unknown cultivator of bees mentioned by Willelmi as being a new discovery in 1768. This credit was objected to by Bonnet as not being well established.

The earliest mention of wax scales that I know of is by Rev. John Thorley in his book on bees, published in 1744. He tells of finding eight scales on the abdomen of a bee, and describes his method (the same as used by Hunter) of proving it to be wax. In Dadant-Langstroth is mentioned a still earlier discovery of wax scales; if I recall correctly, by one Martin John, but I do not believe the claim is well established.

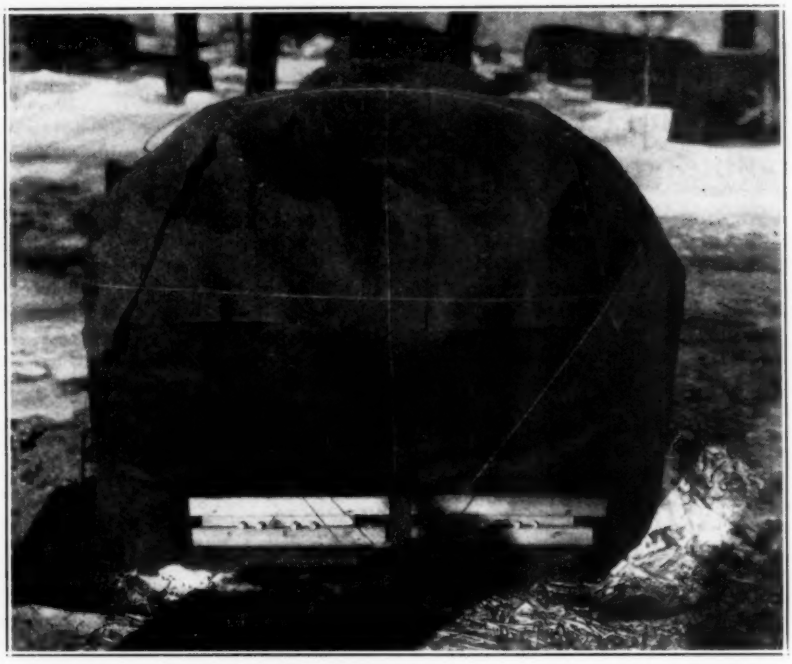
A number of the old-time practical beekeepers knew that pollen was not wax, notably Charles Butler, 1623, who reasoned out in exactly the way that Hunter did, that it could not be wax, but was evidently food for young bees. Iowa.

ANALYSES OF SWEDISH HONEYS

	HONEY FROM APIARIES, REPORTED INFECTED WITH FOULBROOD							HONEY FROM APIARIES, REPORTED FREE FROM FOULBROOD						
No. of Sample	A	1	2	3	4	5	6	B	7	8	9	10	11	12
Source (as reported)	Clover and Honeydew	Summer Flows	Summer Honey	Clover	Honeydew from Oak & Basswood	Some Heather, Honeydew from Basswood	Clover and Honeydew	Clover and Heather	Heather	Heather	Heather	Clover	Clover	Clover and Honeydew?
Color	Light	Light	Light	Fairly Light	Very Dark	Dark	Fairly Light	Dark	Fairly Dark	Fairly Dark	Dark	Light	Light	Fairly Light
	Quantity of ash constituents in milligrammes per 100 gm. honey													
Chlorine (Cl.)	20	16	17	24	42	36	30	11	12	21	17	19	18	18
Silicic Acid (Si O2)	1.4	2.3	0.8	0.4	2.1	0	0	19.5	9.7	7.6	1.1	0.5	1.8	0.5
Insoluble		5.9	1.9	1.8	5.5	5.2	6.3		14.7	10.3	13.8			6.5
Do. Soluble														
Phosphorus (P2 O5)	17.2	11.8	21.0	16.3	41.8	43.3	47.5	10.1	13.5	18.3	13.5	11.0	20.3	27.7
Iron Oxide (Fe2 O3)	0.3	0.9	0.1	0.9	1.3	1.0	0.6	0.3	0.7	0.7	0.4	0.2	0.7	1.3
Manganese (Mn.)	Trace	0.6	0.2	0.3	0.3	0.2	0.3	2.1	2.5	1.4	1.9	0	Trace	0.4
Calcium (Ca O)	6.3	8.0	6.1	12.0	11.5	12.0	8.0	17.2	15.5	11.2	18.0	5.7	7.9	7.6
Magnesia (Mg O)	4.3	2.7	5.3	3.8	9.1	10.4	8.8	2.3	5.3	6.0	6.3	1.3	4.0	7.1
Potassium (K2 O	--	98.7	133.5	82.0	241.3	187.9	242.7	--	266.7	252.1	275.1	38.3	99.5	173.5
Sodium (Na2 O)	--	12.0	8.9	15.0	122.5	92.8	9.5	--	11.5	16.3	12.0	8.8	4.9	18.0
Total Ash (mgm. per 100 gm. of honey)	147.5	192.7	237.9	182.8	656.6	496.3	427.1	376.0	477.3	455.4	490.2	89.0	195.2	348.1

This table shows the factors which are given in the article above on the influence of soil and flora on foulbrood

Tar Paper and Packing



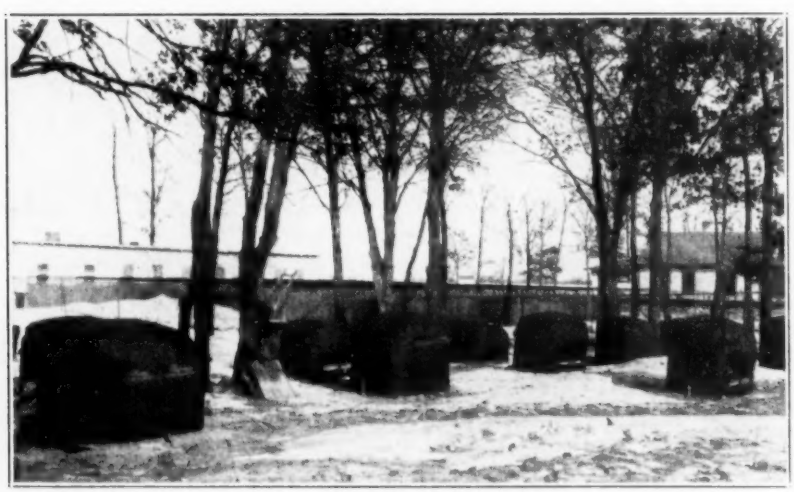
This tar paper case was used in Minnesota to hold two colonies, with insulating material under the paper

Tar paper, used in various ways for winter protection, has been advocated for many years. However, in spite of experience to the contrary, heavy winter packing with wooden cases and deep insulation has so far received practically unanimous approval among our beekeeping advisors. Here and there, however, a question has been raised as to whether this heavy insulation is not too much protection.

Experience among practical beekeepers has indicated that a more moderate amount of packing brings better results year after year. This has brought back considerable interest in the use of tar paper, not only as a means of protection, but also as a material for holding insulation around colonies during the winter period.

The pictures here show a way of packing two colonies, set close together, with a tar paper wrap to hold the insulating material, straw, leaves or planer shavings, with the usual tunnel from the entrances of the hives through the packing material. The paper is pressed tightly against the mouth of the tunnel with strips and held in place around the outside with cord tied securely as shown in the picture.

These pictures were taken at the University of Minnesota and the packing was devised and set up by Prof. Francis Jager. From the report we have received, it is quite satisfactory.



The picture above shows a yard packed in the manner described

Reports have also come to us from beekeepers farther north indicating that a similar means of protection serves equally well in a more severe climate. One North Dakota beekeeper reports that he tried a similar type of winter protection against the advice of those with experience, and so far has found it works well. A report comes from as far north as Canada indicating that tar paper protectors used with insulation are a good means of winter protection.

In our own experience in packing for winter, it was our custom for a long time to use the well-known Dadant method of a chicken wire support to hold leaves and straw around the back and two sides of the hive, with the front open and facing the south. Usually leaves were packed in the telescope cover of the old style Dadant hive or an empty super was placed over the Modified Dadant hive and filled with similar material before the outside packing was put in position.

During the last few years, however, we have experimented with a heavy grade of tar paper, wrapped securely around each hive and held in place with strips. The wrapping is done so that the water will shed readily and not find its way into cracks. A hole is cut at the entrance and no other protection is given the colony. Colonies wintering this way in the latitude of Hamilton have so far indicated better results than have been obtained before by any other method we have used.

Apparently bees do not need any more protection than that which is sufficient to allow them to reach stores readily during the winter. The probability is that bees do not suffer from cold, but rather from the inability to move to new stores when that which they are covering is exhausted. Any means of protection which will keep them warm enough to move readily to stores, therefore, may be considered sufficient in any locality.

"Our Food"

By Worthington and Matthews

This is the title of a finely illustrated 250-page book of very readable type by Josephine Worthington, formerly teacher in the public schools of Rochester, New York, and Katherine Victoria Matthews, specialist in geography in the schools of Rochester; published by F. A. Owens Company, Dansville, New York.

It is designed to acquaint children of primary grade age with the basic facts that make living for them, and for adults, comfortable and pleasurable.

Food, clothing and shelter have

been prime necessities of man from time immemorial. Transportation made it possible for man to vary his diet, clothe himself with goods bought from distant localities, and furnish his house with a variety of material.

Until recent years, education has done little to correct the idea that we of today are entitled to everything that comes our way. No one seems to realize the importance of why we are eating food from the four corners of the earth instead of roots and berries from our immediate neighborhood; why we can have cotton, wool, linen, silk and fur instead of the skins of animals; why our houses are brick, stone, concrete and many kinds of wood instead of being caves.

This book will enable a child easily to grasp the idea that if it were not for men and women living in distant lands, engaged in all sorts of occupations, so much would be taken out of our lives that we would be uncomfortable and unhappy.

One paragraph is titled "Sugar and Other Sweets," and carries the story of honey and the honeybee as part of its subject matter, with photographs loaned to the authors by the American Bee Journal.

Altogether it is an entirely worthwhile book for children whether for use in school or home.

Paralysis or What?

I believe I have a case of the above. The colony in question was under my observation about three years ago. During the first season I thought little of it and supposed the small, dark bees to be tree bees, who had come to rob only to be stung and cast out to die. But as time wore on I grew a distrust of conditions.

Last year conditions were somewhat exaggerated and the colony seemed to weaken. I transferred the bees into a clean hive when the flow came and they built up and made good surplus. But I now find them in worse conditions than ever before and I am giving them but a few days of grace in which to show improvement or the cyanide.

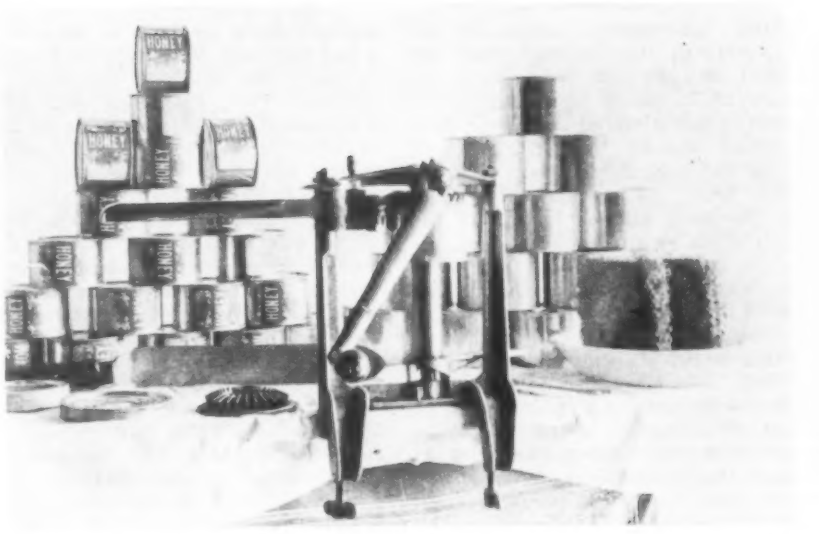
I am sending bees to Washington, D. C., for expert advice and may let you know something of interest soon.

J. H. Sturdevant.

Label Paste

One of our Canadian readers calls our attention to the fact that the quotation concerning label paste at the top of page 344 of our July number is incorrect. The incorrect part reads: "When of the desired consistency, add from 10 to 25 per cent of water." It should read: "When of the desired consistency, add from 10 to 25 per cent of water glass." (Water glass is soluble glass.)

A Home Canning Outfit



With this can sealer, honey can be put up like other food products in tightly sealed tin containers of small size

When visiting with Bert Aldrich at Smithland, Iowa, I was interested in a home canning outfit which seals tin cans. The cans are made just like those containing various food products which we buy at the stores. The picture gives a good idea of them. The No. 1 standard can holds one pound of honey and measures 2 11/16 inches in diameter by 4 inches in height.

The price of the Burpee can sealer is $18.00. The cans, when bought in lots of 1,000 at a time, are $21.00 a thousand, packed in paper cartons, each carton holding 315 cans.

The sealing operation is very simple, the machine being hand operated. No processing or sterilizing is necessary. The honey is simply poured into the cans up to the required amount for one pound, put in the machine and the can sealed perfectly air tight, with no possible chance for the cover to be shaken off. It makes a very neat small package. About eight or ten turns of the crank of the sealing machine completes the operation.

There are other sizes of cans, the No. 2 can holding 1 pound and 4 ounces; the No. 2½ can holding 2½ pounds, and the No. 3 can holding 3 pounds. Sealers can be obtained to seal all of these sizes.

The equipment is supplied by the Burpee Can Sealer Company, 215 West Huron Street, Chicago, Illinois.

Effect of Light to Be Studied at Washington

Dr. L. M. Bertholf has been appointed field assistant, to continue investigations at the Bee Culture Laboratory in Washington, under Mr. Hambleton, on the effect of various wave lengths of light upon the honeybee. At the termination of his appointment, Dr. Bertholf will go to Munich, Germany, to study with Prof. Karl von Frisch, of the University of Munich, on a National Research Council fellowship.

Orange and Sage in California

While the full record of the 1930 crop of honey cannot be known at this time, it is nevertheless pretty well known that the early estimates, based on the known amount of rainfall during the wet season, have been proven correct. Even those sections in which there was an abnormal rainfall late in the season have failed to show a corresponding increase in the honey crop. Orange produced a fair crop, but, as far as the present record goes to show, sage was a failure.

R. B. M.

"Insect Pests of Trees and Gardens"

This is the title of Circular No. 42, issued by the Agricultural Experiment Station, North Dakota Agricultural College, Fargo, North Dakota, and written by J. A. Munro, secretary of the beekeepers' association, and Hazel W. Riddle, assistant in entomology of the same institution. It does not treat of beekeeping, but it is a mighty interesting description of the life history, habits and control of insect pests of trees and gardens of North Dakota. Those interested can secure copies by writing to Mr. Munro.

Better Bees for Northern Regions

By Hy. W. Sanders

THE interesting article in the American Bee Journal that appeared on page 286 in the issue for June, 1930, raises some significant points in the minds of those who have followed closely the efforts made during the past thirty years to breed better bees. As readers will remember, the story alluded to tells of the importation of a queenbee from Russia, or, to be more exact, from Harbin, Manchuria, though the queen was of a Russian strain and stated to be one of the best honey-gathering strains in the Manchurian apiary.

These bees, described as grey bees, and now being kept by W. L. Cox, of Elma, Washington, sound from the description very much like our old friends the Carniolans, being "very quiet, good honey gatherers, not excessive swarmers, hardy winterers, disease resistant, and more able to cope with damp, cold weather"—truly a list of all the bee virtues! As the owner has had six years' experience with them, building up from the one original queen since the summer of 1924, he has had nearly six seasons from which to draw his conclusions.

It will be remembered that Dr. Jager has repeatedly extolled the virtues of the Carniolan bee as being better suited to the northerly regions than the Italian bees that are the orthodox breed. Apparently the only argument against them is that they are grey in color and hybridise easily with inferior strains, exposing them, therefore, to danger of European foulbrood.

Which brings us to the point that we desire to make, namely, that until we can control mating of bees there seems little probability of doing any truly constructive breeding work. Dr. Miller worked for fifty years to improve his queens by methodically selecting the best producing and least swarming queens. His averages crept up and up and we all accepted it as being probably true that he was really producing as superior a strain of bees as Holsteins or Percherons were superior to scrub cattle or horses.

Then, right at the last, something happened that shook that faith. Dr. Miller had a dose of European foulbrood that practically cleaned him out of his original stock, because he requeened with Italian bees. The following is from page 218 of "Fifty Years Among the Bees": " . . . for a good many years I preferred to rear from queens of my own, whose workers had distinguished themselves as being the most desirable. The chief thing considered was the amount of honey stored. Little or no attention was paid to color, and unfortunately no more to temper. So I had bees that were hybrids, hustlers to store, but anything but angels in temper. Then, beginning with 1906, I introduced quite a number of Italian queens, in the hope that among them I might find one as good as my hybrid stock, without so much ill-temper. By 1913 most of the black blood was worked out, and in that year I obtained the world's record for the highest average of sections from as many as seventy-two colonies. It had come to pass that my best yields were from colonies having three yellow bands."

The record yield of which Dr. Miller speaks was 266 pounds of comb honey per colony. His previous two records were in 1881 with 117 pounds and 164 per cent increase and in 1903 with 124 pounds of honey and 129 per cent increase. During the record in 1913 all increase was obtained from eleven colonies specially set apart for that purpose.

Now, if by careful selection through all those years Dr. Miller had really bred a superior bee, we should have expected that record yield as soon as honey conditions were favorable, because of the superior strain of honey gatherers. Unfortunately, however, he had changed his stock radically during the preceding five or six years, partly, as he says, to get bees more easily handled, less excitable, and partly to combat European foulbrood. So one comes to the reluctant conclusion that the years of careful breeding were not the real cause of that record yield of 1913.

On the other hand, there is no doubt that Dr. Miller himself had become a past master in the art of producing comb honey, and when the ideal year came, with only seventy-two colonies, he had been able to produce these striking results.

Now to apply these rather rambling conclusions to the case of the so-called "Kerensky" bees. Insofar as they are Carniolans, or belonging to the same race of bees, it is quite possible that they may produce striking results in the northerly part of our country, provided that they can be kept pure. This last is the greatest problem, for they will interbreed with any other bees within several miles. Is it too much to expect that some of our governmental research agencies could find a location on some remote hillside in a district where there are few, if any, wild bees, and no "kept" bees within reach?

Perhaps in this way we may really get better bees for the northern regions, instead of trying to evolve superior strains from Italian bees. We import seeds and stocks from plants that are found to be resistant to cold winters and uncertain springs in foreign countries, in order to get plants that shall be able to withstand severe conditions here We do not waste time trying to adapt species that are indigenous to milder climates. Yet with the bee we still attempt to breed our Italians, even though we have so little control of mating, and expect it to improve under conditions alien to the country where they have developed.

A Russian bee, if kept under proper controlled breeding, might prove as satsifactory to the northern country as the famous Siberian crabapple, "pyrus baccata," which can be grown very nearly to the Arctic circle.

California.

Honey for the Eyes

By Jes Dalton

I run a small roadside honey stand and get quite a kick out of the experience with my customers. One lady held me for fifteen minutes recently, binding me up to guarantee that the "molasses looking stuff was not made honey."

But the queerest request was this morning, when a bright appearing man driving a large car stopped and asked for "honey for my eyes." He seemed to think I should be posted up, and to my incredulous look assured me that it was fine for sore eyes. I have always heard that certain kinds of honey were quite good for sore eyes, but to think of doctoring eyes with extracted or comb honey was a new one on Dalton.

He assured me that its use, taken in time, would stop cataracts. I wondered if anyone had ever heard of this recommendation for honey and if there was any possible foundation for the supposition. I will frankly confess that it was a new one on me. I had never run onto it either in bee literature or any place else, and am passing on the story and the fact that I sold an apparently afflicted man (he wore dark goggles) a 15-cent bottle of honey for his eyes.

Bees for Pollination in Utah

With an abundance of fruit blossoms—perhaps more than ever before in the history of the state, the increases in Utah, Washington counties offsetting the losses due to frost in northern areas—honeybees in Utah are busy storing away a record crop of honey for 1930.

Fruit growers of Utah are aiding honeybees in pollinizing fruit blossoms this year by delaying the application of arsenical calyx spraying until at least 90 per cent of the petals have fallen. It was pointed out by Leroy Marsh, inspector, and others that any interference with pollination

would result in a reduction of the setting of fruit; also that every bloom which was sprayed with the calyx spray contained poison which was fatal to the bees.

Untimely spraying, which often proved costly to the apiarist, was eliminated in this section this year.

G. P.

Combining Nuclei and Packages in Migratory Beekeeping

Mr. William J. Oates, of Santa Barbara County, California, is trying the experiment of uniting three-pound packages of bees, queen included, with four-frame nuclei, in standard ten-frame hives, and moving them to the white and black sage near the coast for the main honey-flow. Within a few miles of the ocean are extensive areas of sage territory, but high winds and dense fogs have discouraged most beekeepers who have undertaken to operate apiaries in this region. These high winds and dense fogs prevail at the time of the honeyflow.

R. B. M.

Moline Baker Links His Bread With Honey

Bread and honey for children after school. Here's how the makers of Check Bread, in Moline, Illinois, advertised it:

"Rosy cheeks, sparkling eyes, keen appetites—the youngsters have just come home from school. 'Mother, may we have some of that wonderful Check Bread with butter and honey on it?' And mother is always delighted when she hears this eager request, because she knows there is nothing more beneficial and nourishing for healthy, growing children than wholesome Check Bread spread with butter and then generously topped over with pure golden honey. In fact, doctors suggest that children eat bread and honey often—it is good for them. Have some ready tomorrow when the children come home from school."

F. H. Madison.

A Compliment

The June cover page of "Bees and Honey," published in Los Angeles by George W. York, gives a photo of the four Dadants, H. C., C. P., M. G., and L. C., and of their home apiary, where bees have been kept for sixty-six years.

Mr. York is the former editor of The American Bee Journal, which he published at Chicago for twenty years, until 1912, when he sold it to the Dadants. He did not then expect ever to publish a bee magazine again, but he founded "Bees and Honey," which he has now been publishing for eleven years. His headquarters are at Los Angeles, California.

A Word to the Prospective North Dakota Beekeeper

By E. H. A. Fischer

VARIOUS articles have appeared the last few years in bee papers picturing North Dakota as a beekeeper's paradise. The writer, after living here forty-two years and engaging in commercial honey production for the past seven years, wishes to inform the newcomer that some grief will be mixed with the sunshine.

Certain estimates have appeared of the acreage of sweet clover in the various counties. The estimate for two counties is 30,000 acres each. The outsider would imagine that huge tracts of clover are in every district. In reality the area of those two counties is over 1,000,000 acres each; therefore the estimated acreage is 3 per cent of the total. A large portion of that 3 per cent will be plowed up, while green, for fertilizer, and some of that 3 per cent is sure to winter-kill. The acreage that will benefit the beekeeper—i. e., that left for seed or pastured—will be a small fraction of 30,000 acres, and that scattered over a county of more than 1,000,000 acres, will certainly surprise the newcomer when he first drives around looking for a suitable location.

Given a sufficient acreage of clover and alfalfa, what, then, will be the limiting factor in securing crops of honey like one reads about? If the acreage of clover is at hand, the biggest gamble then is the weather during the flow from July 10 to August 15. Rainy, cool, windy or cloudy weather between the above dates seriously interferes with the flow. A good colony on a clear, warm day will scale an eight- to ten-pound gain, but on other days nothing. The season of 1928 was wet and cool and the scale hive during August gained just ten pounds. During 1929 the weather was favorable up to August 12 and a similar colony stored ninety-five pounds.

The main flow is over by August 15, and from then to September 1 probably a colony gain of fifteen pounds is usually recorded.

Several reports state that the flow lasts until October. The writer has yet to harvest a single pound of honey stored in September, with the exception of 1924, when a small surplus was stored.

Given sufficient clover, soil moisture, warm, clear weather up to August 15, what then is to detract from North Dakota being a paradise?

The spring here is usually cold and windy, and several years we have fed heavily until June 25. Wintering is easy. A fairly dry cellar, but with each colony on a solid hive body of honey, usually assures the safety of a colony from November 1 to April 15. There is just a trace of American foulbrood to worry about, thanks to an efficient inspection department. Swarming is very bad most seasons. To one not accustomed to excessive swarming it will make him think that the bees are crazy.

Living costs here, including fuel, are about 20 to 25 per cent higher than in the Middle West, and the westerner will get a surprise when he purchases such things as fruit, lumber, etc.

After painting the foregoing dismal picture of this so-called paradise, what can an able, industrious beekeeper expect to average here with a 250-colony outfit? Over a period of years the average should be from 150 to 160 pounds per colony in **good** locations. The market here now is about 6½ to 6¾ cents. An ambitious man, at that figure, can make a good living from bees in North Dakota, but for one to leave his old location and by coming here expect to get in on a bonanza, he will find that money is not gathered up by handfuls even in North Dakota.

Giving Drawn Out Combs

Drawn out combs which have been stored during winter and treated with sulphur fumes against waxmoth are much improved by being stood in the sun before being given to the bees. The combs should be placed in a slanting position, so that the sun can shine into the cells. Care must, of course, be taken to avoid melting the combs. As soon as the wax is becoming yellow, they are ready for use and are then accepted by the bees with enthusiasm. Such sun-warm combs also form the best means of attracting bees into the supers.—Die Bienenpflege, Germany, April.

A. D. B.

Milk and Honey Drinks

Mr. Henry Cope, of Skiatook, Oklahoma, recently sent us a clipping from the Tulsa "Tribune" containing six different summer drinks containing milk and honey. There are many such items appearing in the newspapers just now, which are greatly to the benefit of the honey producer. Our readers will confer a favor on us by sending copies of such articles to the American Bee Journal. We are also interested in advertisements of honey appearing in the newspapers.

Beekeeping in the Land of the Rising Sun

Here are three pictures sent us by Nanrey Adachi, of Tokyo, Japan. Adachi is associated with H. Watanabe, the publisher of one of the Japanese bee papers, and for the past year has been sending us copies of the Tokyo Nichi-Nichi, one of the leading newspapers of Japan.

The upper picture shows how Mr. T. Takatsu, of Mitaka, one of Japan's most enterprising beekeepers, goes about his business. Mr. Takatsu not only keeps bees, but is a manufacturer of bee supplies. The picture shows him at the Kitzugawa international aviation ground.

The picture at the lower right is of Koya Temple, situated in some of the native trees of the island, a very beautiful situation. The one at the left is of the Itsukushima shrine in another wonderful setting.

For enterprise and progressiveness, the Japanese are fast equalling the Americans. It is a pleasure to show these pictures indicating something of the country and to pay compliments to one of its progressive beekeeping leaders.

Embargo Difficulties in Disease Eradication

Commenting on the article by Dr. Mart R. Steffen in our July number, page 332, "The Permanent Eradication of American Foulbrood," where Dr. Steffen recommends quarantine, destruction of infected colonies and honey, and an embargo on everything within the areas under consideration, we wrote to Dr. Steffen:

"Your article on foulbrood is well done. We all think so, even though we may not want to agree with you in everything. Two things, I think, might be offered as a criticism. One, bees will fly over a state line even though the state in the imaginary boundary is finally cleaned up at great effort and expense. In other words, the disease eradication problem is a federal problem and not a state problem.

"Secondly, in all the cases I know of, where eradication has meant the complete destruction of property, such as a herd of cattle or of swine, provision is made for at least paying the owner for part of the loss. In other words, if public protection demands that bees from which a man is obtaining his living be destroyed and completely burned up, he at least should be partly compensated for the loss. This is, of course, entirely from the standpoint of the commercial beekeeper who is producing honey to bring him his living.

"Yet I cannot deny the logic and the correctness of what you say. It is a question of expense. If the industry is sufficiently important to justify appropriations large enough to pay for losses and to make a nation-wide campaign, then I believe universal eradication is the only solution. But just as long as any one state adopts eradication, the disease is bound to find its way back into that state, because the flight of the bee is uncontrolled and it will certainly get back over state lines."

In reply, we quote from Dr. Steffen's letter:

"Your criticism of my article was very lenient; I expected it to be worse than it was, because I pounded some rather touchy points.

"Now, about bees flying over quarantine boundaries. That is one of the points that trained eradicators would not give thought to until circumstances reached that point. If such a consideration were to stop us from launching a state campaign, it would also stop us from launching a nation-wide campaign, because then we would have the Canadian and Mexican borders to think of.

"If we ever reach that point, laws will be enforced making it unlawful to keep bees within flying distance, say seven to ten miles, of certain borders; or possibly a tier of counties which could be made permanently modified quarantine areas in which unceasing control measures will be resorted to. We have a similar condition in the eradication of Texas fever in cattle, and it works very nicely.

"With regard to indemnifying beekeepers for colonies destroyed in the process of eradication, I believe this is a point which will be settled before nation-wide eradication is inaugurated; in fact, if a nation-wide eradication of foulbrood is ever undertaken, it will only be because we shall have shown honey to be a valuable food article. When that has been definitely proved, the matter of indemnifying beekeepers for destroyed colonies will be a natural, logical and just consequence."

Bees in Central Park, New York

The New York Herald-Tribune of July 13 gives a statement concerning a hive of bees located in Central Park for the benefit of the patrons of the Museum of Natural History. It is to be hoped they may find enough nectar to live, though it is quite doubtful.

Seed Crops and Pollination

An Interview With President Frank Beach

By L. H. Sweetser

That the benefits to seed crops from the proximity of apiaries to the blossoming fields should be more fully recognized by seed growers, is the opinion of Frank Beach, of Burley, president of the Idaho State Beekeepers' Association. This is especially true of the high altitude states where alfalfa and other clover seed crops are grown to best advantage.

Although the value of a plentiful visitation of bees in the orchard is pretty well known, says Mr. Beach, seed growers of the various legume crops which are pollinated principally by insects do not seem to have been impressed with the benefits that come in a heavier and surer seed crop when honeybees are stationed in the neighborhood.

Most of the high altitude and northern latitude states are producers of an excellent quality of clover seed. And they are likewise good honey states. High altitude and high latitude make for similar results, asserts Mr. Beach, namely, a shorter and more intense honeyflow and usually a very high quality of apiary product. As it has been demonstrated that many bees make much seed, the beekeeper and the seed grower in these states fit in with the best program for development, and along with the encouragement of the growing of these legumes by the seed specialist for seed purposes there should be coupled the encouragement of the beekeeper for the production of high quality honey.

Yakima Valley orchardists learned to their cost that the destruction of bees through the use of sprays poisonous to these workers resulted in a heavy falling off in fruit crops. They now use these sprays after the petals have fallen, thereby practically eliminating this source of destruction. And they are also paying the apiary owners to plant their colonies within the orchard limits.

A frequent complaint of the Idaho alfalfa seed growers is that the plant blooms have slipped and that the resultant crop was light. This cause of scant seed crops should be practically done away with when apiaries are located within range of the seed plots.

Idaho ships yearly between two hundred and two hundred and fifty cars of honey. This indicates a relatively high bee population for the state. The same may be said of the other mountain states. With the planting of bee colonies close to seed plots it is thought that the shipments of alfalfa and clover seeds will be increased commensuate with the shipments of high grade honey for which these states are noteworthy.

Packing and Marketing to Put Out "Blue Diamond" Brand of Honey

From the California News Letter for July, we learn that the new California cooperative, Packing and Marketing, has just finished the installation of honey equipment and will begin at once to put on the market the "Blue Diamond" brand of honey. This is certainly a step in the right direction, and we are glad that California is beginning to see results from its new marketing machinery.

Not Such a Bad Idea—Let's Try It Here

According to Mr. Oberl H. Reutschler, as reported in the doings of the Berlin Conference, the beekeepers of Wurtemburg, with their 100,000 colonies, leave the work of combatting brood diseases in the hands of experts, who are also practical beekeepers, trained for their special duties.

Owners of colonies that are lost by reason of disease are compensated 80 per cent of their loss. Beekeepers' associations contribute 50 per cent of this compensation, which is raised by means of an assessment of about one cent per colony, in American money, and the remainder is paid by the government. The assessment is not called for every year. R. B. M.

Propolis from Trees

In your June number of the American Bee Journal you quote a certain writer who claims that propolis, or beeglue, comes from digested pollen.

My experience of the source of propolis is the same as yours—it is gathered from trees. Where the sweet gum grows extensively the propolis found in beehives comes nearly all from this kind of trees. In my younger days I used to gather the condensed juice of the sweet gum and for its pleasant taste used it as chewing gum. It had a greenish brown color. Time and again I found the very same stuff in beehives in the form of propolis. It had the same taste and the same color.

Bro. Alphonse Veith, Indiana.

Agriculture in New Brunswick

In an attractively arranged 166-page publication containing thirty-three photographs, ten sketch maps, and a general map in color, which has just been issued by the Department of the Interior, Canada, is given detailed information about the natural resources of the Province of New Brunswick and the opportunities they present for an industrial activity very much greater than has hitherto been attained in that maritime country.

This publication can be obtained from the Director, Natural Resources Intelligence Service, Department of the Interior, Ottawa, Canada.

Beehives of Unique Design

It seldom occurs to beekeepers that their bees would like to go to church at least once a week. One boy who had given considerable thought to the matter decided that a community church would be a good thing for the different swarms of bees, and so he built one adjoining their regular hives and fitted it up so that they would feel right at home when they entered. It has a towering steeple, and presents all the outward appearance of the village church.

The Place of "Sweets" in the Diet

By P. Mabel Nelson, Ph. D., Department of Foods and Nutrition, Iowa State College

SOMEONE has said that inasmuch as food is agreeable it is safe to assume that the dietetic errors arising from its use are most apt to be those of consuming it in excess rather than otherwise. If one could be assured that the food consumed was well balanced as to the necessary nutrients and their correct proportions, probably the dangers of excessive food intake would be negligible. Food excesses are apt to be intimately associated with food likes. Sweets are the foods most generally pleasing and, therefore, most apt to be represented in the diet in overlarge proportion and hence may become a cause for concern.

Sweets or sugars are pleasing because of their quality of sweetness. Sugars without sweetness do not interest the consumer. This was thought by Professor Willamon, of the University of Minnesota, to have been the reason why the recent effort to introduce corn sugar as a household sugar was a failure. The homemaker, after some experimentation, learned to use it successfully, but the man of the house did not like the product made with it. The corn sugar product was not as sweet as the cane sugar product to which he was accustomed.

The various sugars have been rated for comparative purposes according to their degree of sweetness. Using cane sugar, or sucrose, as the measuring rod and one hundred as the starting point, they rate in the following order: Fructose, 173; invert sugar, 123; sucrose, 100; glucose, 74; xylose, 40; maltose, 32; rhamnose, 32; galactose, 32; raffinose, 23; and lactose, 16.

Fructose, or levulose, the sweetest of the sugars, is difficult to crystallize. The chemists of the Bureau of Standards, Washington, D. C., have, after much experimentation, induced crystallization. The production of this sugar is still in an experimental stage, but semi-commercial scale operations indicate there is every chance of its succeeding ultimately. This sugar is made from the Jerusalem artichoke, dahlia bulbs and other tubers, in which it is found to the extent of 12 to 15 per cent. Probably the percentage of fructose can be increased by cultivation, as was the case with the sucrose of the sugar beet.

The artichoke, the most practicable source of levulose, is not particular where it is grown, but will grow in many different soils. The expected yield is 700 to 1000 bushels per acre. With sugar from the artichoke put on a commercial basis, science and research will have found one solution of the "farm problem." The development of a vast new industry will follow if the manufacture of fructose can be placed on a competitive basis with the older sugars.

Prior to the eighteenth century, sugar was looked upon as a drug, having been so used by eastern physicians as early as the tenth and eleventh centuries. Persian physicians first cultivated sugar cane and introduced sugar from cane into medicine. It was known as "honey of canes."

Columbus is said to have imported the first sugar cane into America on his second voyage. Its cultivation began in 1751. The cultivation of the sugar beet dates from 1747. Though sugar cane and sugar beets were cultivated from this early date, sugar did not come into general use until much later.

The world today consumes forty billion pounds of sugar every year. The United States consumes ten billion pounds of sugar annually, and of this it imports eight billion pounds annually, or 4.5 per cent of all it uses.

The sugar consumption per capita in the United States was, in 1830, 7½ pounds; in 1918, 89 pounds, and in 1926, 110 pounds. At 110 pounds per year, the portion which each person supposedly consumes amounts to three-tenths of a pound, or a little over one-half cup, of sugar daily. You may wonder how all this sugar is used. In 1919, 9 per cent of it was used by the confectioners, 6 per cent by the bakeries, 3 per cent for soft drinks, 1 per cent for tobacco and chewing-gum, and 80 per cent in homes. These percentages do not represent the present distribution, however, for since the World War the consumption of sweets has increased more rapidly than heretofore. Prohibition has been a contributing factor. Many brewing companies have turned their plants into wholesale candy factories, chocolate factories, or factories for the manufacture of malt syrups for confections, thus increasing the quantity of sugar used for soft drinks and confections. Thus, for the second time in our history, sugar and "sweets" bid fair to supersede alcoholic beverages.

The first instance in which they replaced alcoholic beverages was in the year 1838, when the twenty-fifth Congress ruled (U. S. Statutes at Large, Vol. 5 page 258) "that the allowance of sugar and coffee to the noncommissioned officers, musicians, and privates, in lieu of the spirit or whiskey component of the army ration, . . . shall be fixed at six pounds of coffee and twelve pounds of sugar to every hundred rations." In 1860 the coffee and sugar allotment was increased to ten pounds coffee and fifteen pounds of sugar per hundred rations.

In 1918 the A. E. F. ration provided a milk ration double, with a 100 per cent increase in candy. The ration increases for special troops were: 50 per cent increase in coffee, 33 1/3 per cent increase in sugar, and 25 per cent increase in meat. Quite a change, was it not, from the practice in vogue in 1799 of allowing extra issues of spirits at the rate of one-half gill per ration "in cases of fatigue service or extraordinary occasions"? These changes in the army rations were made as the result of the recognition of the superiority of sugar to "spirits" as a source of energy, and of coffee to "spirits" as a stimulant preceding or following severe physical feats.

The starches and sugars of the diet after digestion in the alimentary tract enter the blood stream almost entirely in the form of glucose. The glucose is carried directly to the liver, where all that is not needed for immediate use is tucked away as glycogen. This store of glycogen in the liver maintains the blood sugar at a normal level. During fasting the glycogen supply of the liver may be greatly depleted; if so, the body draws upon its supply of fat for energy. This use of carbohydrate, before body tissues are drawn upon, is known as the protein-sparing power of carbohydrates.

Twenty years ago Doctor Shaeffer proposed using easily digested carbohydrate in the dietetic treatment of fevers. He was laughed at by his associates. Now physiologists are aware that a generous glycogen supply in the liver is the best preparation for an acute fever, for prolonged anesthesia, for a short fast, for mountain climbing, for a forced march, or any physical emergency.

Diet is playing an increasingly prominent part in the accomplishment of the physical feats of athletes. At one time it was thought that because man's muscles are enlarged by exercise, beefsteak was the best food for teams training for athletic feats, and beefsteak was used generously. But with "muscle-bound" teams resulting, beef was omitted or used less generously. The correct dietetic procedure is to use carbohydrate generously, protein and fat sparingly, — four parts of carbohydrate to one part of protein and fat being a desirable ratio.

The importance of the kind and quantity of food consumed in the

achievement of the athlete was demonstrated for the first time in the Boston marathon races of 1924 and 1925. The 25-mile marathon race was run the first year by picked men who had not had previous dietary instructions. Six of the men were observed at the close of the race for their physical condition and the level of their blood sugar. Two of the six runners showed a lowered blood sugar, the other four runners showed a marked decrease in their blood sugar. All six men showed muscular twitching, extreme palor, cold, moist skins, nervous irritability, and collapse. One runner was brought in limp and unconscious by a policeman.

The following year, 1925, the same men participated in the marathon. In the meantime, experiments had been made to determine at what point in prolonged physical exertion the blood sugar falls. A definite initial rise in blood sugar after running one to two miles, and then a fall to normal or about so between the fourteenth to eighteenth mile was found. It was decided to give to the runners, who had failed to finish in good condition the year before, a large amount of carbohydrate the day before the race and also glucose candies to eat during the race when symptoms of weakness occurred.

At the end of the race, in order to determine whether the ingestion of the sugar had influenced the symptoms shown the previous year, the blood sugar levels of the runners were compared with the blood sugar levels of the year before, and the speed of their running with the speed of the year before. The results were noteworthy. All the runners showed normal blood sugars and were in excellent physical condition at the end of the race. Three of the six runners finished in better position than they had the year before and in better running time. One runner, who had been advised not to eat sugar or potato, started in good condition, but was in poor condition at the second station. He was given an orange and candy to eat. The men who received the glucose candies made the comment that they "felt fresh" after eating the candy. The exhaustion, weakness, and shock shown by the runners the previous year was prevented by the ingestion of the carbohydrate and glucose before and during the race.

The next question raised by the physiologists was whether the source of the energy, carbohydrate, protein or fat, or the liberation of the energy at the appropriate time was the most important consideration. They wished to know which food nutrient provided the most economical source of energy for muscular work. In order to answer this question, three subjects were tested for their muscular efficiency after the ingestion of different foods. Stationary bicycle riding was the form of exercise used. An unselected mixed diet, a carbohydrate diet, and a mixed fat and protein diet were the diets tried.

There was found to be no significant variation in the net efficiency on the three diets, but on the fat and protein diet early fatigue and complete exhaustion, with slow recovery, were observed. The picture was that of the individual who fasts or brings on ketosis by carbohydrate privation. Ketosis is the term used to describe the condition caused by an accumulation of the waste products of fat combustion in the blood. The balance was in the favor of the carbohydrate diet. Admitting that a carbohydrate diet is valuable for speed, the next question was, will it supply the athlete with energy for endurance?

Dr. Sansum and Miss Bowden, of the Potter Metabolic Clinic, have studied diets for speed and endurance. They recommend using a diet which is low in fat and high in carbohydrate during the period of training. They suggest avoiding the following foods: rich milk, butter, cream, ice cream, cheese, gravies, bacon, lard, and oil dressing. They advise the liberal use of cereals, breads, fruits, vegetables, sugars, syrups, honey, jam, jellies, and candies. They advise the use of skimmilk and sugar on cereals. It is their experience that fat is a slow-burning fuel and therefore tends to "slow up" a man's activity.

During muscular exercise, lactic and carbonic acids are formed in the body. These acids must be removed or oxidized rapidly. The carbonic acid is removed by the lungs, the lactic acid oxidized, some of it uniting with oxygen to form lactic acid precursor, and some of it neutralized by the buffers of the blood. The lactic acid entering the blood is buffered by sodium bicarbonate. The sodium combines with the lactic acid to form sodium lactate, and hence the alkalinity of the blood is reduced, the alkali reserve of the body is reduced and the body is less able to carry away the acids formed. The less there is of the alkali reserve in the blood, the sooner fatigue results from exercise.

Richly alkaline foods aid in decreasing fatigue and producing endurance by building up the alkali reserve of the blood. Beans are one of the most alkaline foods, therefore are most excellent in training diets. This is the reason also for their generous use in the army rations.

Physical training will increase a man's alkali reserve by as much as 10 per cent and thus increase his endurance. Physical training also increases the mechanical efficiency—that is, less acid is formed on muscular contraction and there is a better removal of the lactic acid.

When a boy enters training, he should eat of protein food generously to build up his muscles; afterward less protein food is necessary. A boy in athletic training should eat a good breakfast, light lunch and a good dinner after the "workout." He should have 3500 to 4000 calories of energy daily, 100 to 125 grams of protein daily, with four parts carbohydrate to one part fat (army proportions) and plenty of alkaline compounds in the dietary.

The high school team of Wilmington, Delaware, made its swimming record, in 1927, because of the endurance of the boys of the team. Their endurance was built up through food. They used, first, large quantities of lacto-dextrin to change the intestinal flora and produce favorable intestinal conditions. They ate malt sugar, malted nuts, dates and raisins, the day before the contest. On this diet they stored a reserve of glycogen in their livers and muscles and hence were able to make unusual records.

At Iowa State College, Conger, an assistant in physiology, interested in amateur athletic contests, made a study of diets for speed and efficiency in muscular exercise. He used white rats for experimental animals and by means of revolving cages tested their voluntary activity when consuming different diets. By putting into practice such information, he has been able to beat the record of the renowned Nurmi, with whom he competed in New York last winter.

There is no longer any doubt that the carbohydrate or the sugar-forming foods are the best foods to use when quick energy returns are desired. This does not mean that sugars and carbohydrates should be used to the exclusion of other foods; in fact, untoward results may follow a prolonged intake of this type of food because of the failure to ingest the vitamin containing or body regulating foods.

Dr. Van der Bogert, who has given considerable thought to sweet eating and its effects, believes that adenoids and enlarged tonsils are due indirectly to carbohydrate excess and sugar. He quotes from a paper read before the Royal Society of London by Dr. Harry Campbell, who assumes the cause of adenoids to be a toxemia of intestinal origin brought about by flooding the intestine with starch which has undergone little, if any, salivary digestion. He comments that adenoids are said to be more common among the British than any other people, and that Sir William Osler thought there was more mouth breathing in England than in any

other country. Great Britain before the war was the largest consumer of sugar. What correlation is there between their sugar consumption and the prevalence of adenoids?

A study was made in the schools of New York City, in 1926, to determine the cause of the colds prevalent in school children. After eliminating such factors as ventilation, temperature of the room, type and amount of clothing worn, because they had no evident connection with the prevalence of colds, it was found that the incidence of colds correlated with the number of the children consuming carbohydrate foods most extensively. In this same connection it has frequently been observed that European children in the tropics, when fed by native nurses, develop mucus disease and adenoids. Supporting the finding that colds occur more frequently in children who consume carbohydrate foods extensively, is the experience of Dr. Amy Daniels, who has been able to protect little children from colds, sinus, and mastoid infections, by giving codliver oil and butterfat liberally in their diets.

The excessive use of sugar, particularly by children, is thought by Doctor Harris, a physician in one of our southern states, to be the most serious dietetic error of the present day. According to Doctor Harris (Harris, S.—New Orleans M. and S. J. 81: 159-166, September, 1928) "the sugar-fed child often becomes rachitic, is prone to colitis and other infections. If he survives infancy he becomes the pale, weak undernourished child, or the fat, flabby, indolent and self-indulgent adolescent. Sugar-saturated, vitamin-starving America presents a problem which may be approached through a study of the sugar-fed child with the idea that an ounce of prevention in the infant is worth more than a pound of cure in the adult." Equally startling is his statement regarding the adult's consumption of sugar—i. e., "Patients with ulcer of the stomach or duodenum, chronic gastritis, gall bladder infections and other abdominal diseases give a history of excessive indulgence in sweets too often for it to be mere coincidence."

Doctor Banting, the discoverer of insulin, has called attention to the incidence of diabetes in people who consume cane sugar in large quantity. In a lecture, given recently in England, he stated that among the natives of Dominico, in the Panama Canal Zone, where sugar cane is one of the main articles of diet, diabetes is practically never found. The sugar cane is eaten by the natives in the raw or unrefined state. However, among the wealthy Spaniards of Dominico, who consume large quantities of the refined cane sugar instead of the raw sugar cane, the incidence of diabetes is surprisingly high.

Doctor Banting says further that the effect of the ingestion of refined cane sugar is even more startling in India, where there is no diabetes amongst the poor classes and where 40 per cent of the wealthy class over fifty years of age are diabetic. The following statements of his apply to our own country and not to foreigners: "In the United States the incidence of diabetes has increased proportionately with the consumption per capita of cane sugar. One cannot help but conclude that in the heating and recrystallization of the natural sugar cane something is altered which leaves the refined product a dangerous foodstuff." (Banting, F. G.—Edinburgh Med. J., 36:18, January, 1929.) If such is the case, it is our responsibility, is it not, to attempt to remove the causal factor, either by improving the present product or by disseminating information about the danger of its use in over-large quantity and by encouraging the use of the natural or unrefined sugars?

It is not difficult to use the natural sugars. They may be used in cooked products as well as for a sweetening agent. The favorite of the natural sugars is undoubtedly honey. Honey has been used from earliest times, but probably has never been more appreciated for its true worth than it is today. Also, there is an abundance of information available on how to use it.

The habit of eating sugar, especially if it is eaten to excess, and by that is meant to the exclusion of the vitamin and mineral carrying foods, is one which may lead to very undesirable conditions in the individual; in fact, even to the point of producing bodily injury and disease. On the other hand, sugar and other "sweets" are the best sources of an easily available supply of energy and should be stored in the body to care for periods of physical stress and strain. The excellent results obtained by men who compete in athletic contests when they give special attention to foods for energy and speed indicate that the "sweets" have a specific role in the dietary. They play an important part in the body economy of the physically active individual. Experience with corn sugar indicates that any sugar to supersede cane and beet sugar must be crystalline and equally sweet or sweeter. It must be produceable on a large scale at a not prohibitive cost. Until then, cane and beet sugar and products made from these sugars will reign supreme in the fields of "sweets."

All Beekeepers May Grade Honey

Many beekeepers mistakenly believe that they are forbidden to use the United States standard grades for honey unless they have special permission or unless a Federal agent has inspected and graded their honey, says James I. Hambleton, of the Bureau of Entomology, U. S. Department of Agriculture.

"It should be clearly understood," says Mr. Hambleton, "that anyone who complies with the U. S. grading rules for honey is entitled to use the United States grades and grading stamp. He may use the official grading stamps or may incorporate the stamp into his own label if he so wishes." A circular has been issued suggesting a way in which this can be done. This will be sent, with other information on grading, upon application to the Division of Bee Culture Investigations, Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C.

The process of grading extracted honey is simple, Mr. Hambleton says. The honey must be of good flavor, of proper density, and as clean as specified for the grade. When packed in opaque containers, the color of the honey must be marked on the grade label. Most beekeepers may have samples of the honey graded as to color, free of charge, by sending a two-ounce sample to the State Division of Markets, the state specialist in beekeeping, or to the State Agricultural College.

Many states now have one or more standard color graders at the service of the beekeepers, but if no grader is available in the state, beekeepers may send samples of honey to the Division of Bee Culture Investigations, Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C.

This free color grading is educational and unofficial and does not carry with it a certificate of grade, color, and purity, such as is issued by the Federal honey inspectors of the U. S. Bureau of Agricultural Economics, who are at the service of anyone who wishes to pay for official inspection and certification. This inspection service is now used for the most part by exporters, but could be made more generally available if the demand were sufficient.

Thievery in Florida

Beekeepers of Hillsborough County, Florida, report the theft of colonies of bees. Complaint has been made to the sheriff at Tampa of the taking of bees and equipment totaling more than a thousand dollars.

L. D. Bray, South Carolina.

Division of Labor in the Hive

By Annie D. Betts, Editor "Bee World"

DR. HIMMER, of the Institute for Bee Culture at Erlangen, Bavaria, has made further additions to our knowledge of the way the work of the hive is organized. Rosch's well-known observations showed that a bee undertakes various duties in a certain order, according to age, but that both the age at which a bee becomes a wax maker, guard, forager, etc., and the number of days she spends at each task vary within fairly wide limits. Himmer used an observatory hive capable of holding two frames (Zander type, slightly smaller than Langstroth). A frame of brood was allowed to emerge in the incubator, and each day for seven days a number of bees were marked with spots of color, all the bees emerging on the same day receiving the same color, except for the bees of the last three days, which were all similarly marked. The work was begun at the end of July, and no further brood was allowed to emerge in the colony till September.

The results were surprising. The wet, silky, newly-emerged bee gets dry at the end of two hours; from one- to three-day-old bees surround the queen (but do not feed her), help form the building cluster, eat honey and pollen, and even go out of the entrance and make jumping movements, as if they wanted to fly—which is, however, first possible at five days old. Four-day bees clean cells, but otherwise behave like the younger ones. At five days they can fly, assist in fanning at the entrance, and act as guards. At six days much pollen is eaten (preparing of brood food), and bees of this age were observed to perform the "shaking dance," to build, and help clean the hive. Seven-day bees will sting, and are busy learning the looks of their home from the outside and in feeding young larvæ, as well as in cleaning, building, etc. Eight-day bees collected pollen, and eleven-day bees also nectar. Both sorts of dances were observed in nine-day bees.

So far, the data is as given by Rosch; but later observations showed that bees, if no younger sisters appear to relieve them, can go on performing young bees' duties (or what we have believed were such) for a surprisingly long time. Bees over forty days old still fed the queen and brood, secreted wax, cleaned out cells, and collected pollen; and it is not certain that their ceasing to feed brood at this age (forty-one days) was not due to the time of year rather than to their inability to do so. It is also possible that still younger bees are able to undertake certain duties not usually attributed to them, for the entrance was not opened until the ninth day after the start of the experiment, so that the bees of the first few days' classes did not get a chance to show what they could do (though, of course, the bees of the last day were only two days old when the entrance was opened).

There is thus no doubt that bees can adapt themselves very largely to the conditions in the hive, and that young bees can start foraging, for example, at a tender age, should this be necessary, while old bees can go on secreting wax and feeding brood much longer than normal, should there be no young bees to take their places. The research also showed that bees do not learn from their sisters' example; they come into the world with an instinctive knowledge of what they have to do.

Later observations in September to November showed that the old (marked) bees were mostly to be found in the outer parts of the winter cluster. Bees aged ninety-three to ninety-eight days were seen to make shaking movements.

On November 4 the nucleus was removed from the observatory hive, in which it could not have been wintered, and the bees were united to a strong colony. The author hopes to investigate whether any of them are still alive this spring. If any are, it will dispose of much we have believed concerning the age to which bees live, and go far to prove that the majority die from accidents, or possibly as a result of the heavy work of storing honey in a normal hive with plenty of super room.

In any case, observations of this type cannot fail to give information very valuable from the practical standpoint, both to those forming artificial swarms and to the honey producer who is also interested in breeding the best bee for his purpose.

(The above segregation of duties was observed by the editor when first introducing Italian bees in hives of common bees. The yellow bees could be easily followed in their progress of duties as they grew older.—Editor.)

Bees Accused of Stealing Nectar

There is the farmer in the neighborhood of Stockton who lodged a complaint with the district attorney on account of his neighbor's bees coming into his property and carrying off the nectar from his wild flowers, and he wanted to know what was going to be done about it.

The district attorney put on his legal thinking cap and tried to solve the problem as to whether a bee is a wild or a domestic animal. The report does not tell how much gray matter he used up in trying to solve the problem, but it does tell that the lawyer solved the problem to the satisfaction of his indignant visitor. Being a diplomat, which is a polite name for a politician, he told the irate farmer that he could impound the bees, if he could catch them, and charge the owner for storage. If the beekeeping neighbor refused to pay storage charges, the bees could be sold to pay the bill. This stroke of Solomonic wisdom was so reasonable, and ridiculous, that the farmer withdrew his complaint and went home laughing, leaving behind him a much relieved public official.

R. B. M.

Aunt Laura Gets Response Over the Radio

I had given some thirty-five talks on the subject of "Bees and Honey" over the radio and was at a loss to know how to keep on. In looking about for my next subject I read one of Aunt Laura's fairy stories and noticed that you were asking boys and girls to tell you what they think of the story.

So, I wondered if the boys and girls who listened over the radio would be interested in them. I tried it. It is going fine. Of course, we would expect some faultfinding. The first came from a disgruntled beekeeper, who told me that beekeeping was a real business and not a fairy story.

I got another call from the same beekeeper, however, who told me that perhaps he was a little hasty in criticising me, because all of his grandchildren gathered around the radio on Wednesday evening to hear more of the fairy story, and that two of the boys he had failed to interest in beekeeping were actually becoming interested.

From the first story fine letters have come in from all parts of California, Nevada, Arizona, and Colorado, the age of the writers running from 10 to 70 years.

I must mention one coming from a commercial beekeeper: "When I noticed that the American Bee Journal had taken to telling fairy stories I thought they must be short of material. I didn't read any of them until I heard your comments over the radio, so I thought I would read the one you had praised so highly, and found it so interesting that I looked up all the old copies, and now I am ahead of you and agree with you that a lot of us old codgers can get some good points from them."

Cary W. Hartman, California.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

MOLDY COMBS

Last fall I put twenty-one colonies of bees in a dry cellar, and this spring when I took them out I found them all dead but seven colonies, and when I opened up the hives I found the combs covered with a white mold and many of them with plenty of honey. I have not been able to find anything in the American Bee Journal on this condition.

The cellar was a very dry one, but no attempt was made to control the temperature, as there was no heat of any kind, and I suppose that the temperature was from freezing up at different times. One year ago I put several colonies in the same cellar and every one came out in fine condition. Late last fall I fed considerable sugar and water to them and I noticed at the time I put them in, also when I took them out, that some of the comb that still had honey and sealed, that it had a very blue cast in color; the mold seemed to be on the empty comb.

Do you think the syrup had anything to do with it. The ones that died were light colonies of bees, but many had plenty of honey when I found them dead. The hives were ten-frame Danzenbaker, single wall.
NEW YORK.

Answer—From what you say of the mould in the hives, it appears that it was not so dry in that cellar as you thought.

I am under the impression that you did not furnish much, if any, ventilation. A little ventilation would have kept the combs from becoming mouldy. It is possible also that the feed which you gave them had too much water. We always use two pounds of sugar to one pound of water, for winter feed, and we generally give it a while before putting the bees away, so that they may evaporate some of the moisture. If it is fed to them very late, it is better to give them candy over the top of the combs.

Next time you winter bees in that cellar give them some ventilation by making an opening in a dark place where they will not see the light. Try also to keep the temperature at about 45 degrees.

ROBBING

Strange looking bees have been robbing one of my colonies all this year and now have started on another colony. My bees are the three-banded Italians. The robbers look somewhat like Italians, but differ from mine in that they are minus hair on the thorax, being black and slick, although some of them have a little hair. The end of their tails is marked similar to an Italian queen's tail, being a rich black with a faint ring or two up about one-third of the body, and the portion of the body where three yellow bands should be is solid yellow or copper color—really more of a copper color than my three-banded Italians. These robbers do not act like most robbers; they alight with little or no hesitation, act as if they belong to the colony, sit around on the alighting board and gradually work their way in. The bees only recognize them by odor, and after the guards grapple with them they do not leave if they are not thrown out on the ground; they will still cling to the alighting board or cluster of bees. I caught ten of them and put them in a queen introducing cage which had been used for introducing last year, and all these were dead within two or three hours. What caused them to die in the cage? Is a cage that has been used a year ago poisonous to bees, or had these bees been hurt by the guards? I picked them from among the cluster of bees and guards on the alighting board—caught some of them soon after alighting, before they seemed to be injured. I have not noticed these bees working on any flowers, and no one here has any bees that look like them. What kind do you think they are? They may be the golden Italian. I have never seen what is called the golden, but these are not solid yellow; just the portion where the three bands should be is solid yellow or copper.

How soon can frames of honey be returned to bees after fumigating with carbon disulphide?
ALABAMA.

Answer—The bees that are trying to rob are old bees that have lost all their hair by active slipping in and out of the hives which they are trying to rob. They may be from your own hives or may belong to some neighbor's apiary. They have become so used to robbing that they are bold, and that helps them to succeed in robbing. The reason why they die so soon after being imprisoned in a cage is that they are quite old already and fret more than other bees when confined to a cage. If they had a queen with them in the cage they would probably live longer.

Carbon disulphide is used to kill the bee-moths and their larvæ in the combs. After leaving them closed up for twenty-four hours or so, they should be given air, and may be used in the hives very shortly after, for this gas evaporates rapidly.

QUEEN'S LAYING POWERS

Please verify for me the statement that a queenbee lays from two to three thousand eggs a day, the eggs being equivalent to two and three times the queen's own weight. Also the statement that this egg laying is kept up for weeks at a time.
NEW JERSEY.

Answer—They say that the average number of eggs laid by a queen in a day is not much over two thousand, but queens have been known to lay three thousand eggs or more for three weeks in succession.

"The weight of the maximum number of eggs that can be laid daily by a queen is equal to about twice the weight of the queen."—"Beekeeping," by Phillips, page 41.

Of course, we must understand that the queen is fed heavily by the workers at the time when the most eggs are wanted and that the food given her is what is generally known as "royal jelly." This royal jelly, produced in the salivary glands of the workers, is also fed to the young larvæ, or grubs, and with it they grow immensely in size in a very short time.

The royal jelly is evidently pre-digested food, easily assimilated.

WHIPPED HONEY

I see an article in the old reliable American Bee Journal about whipped honey. Will you please send me details on how to whip the honey? What kind of a machine do you use? Where do you get the machine?
VERMONT.

Answer—The quantity of honey which has been whipped so far has not appeared to create a demand for a machine to beat it. What little we have handled was smiply whipped with a wooden spatula. It does not take a great deal of beating if it is done at the right time, when the weather is getting cool and the honey shows a tendency to granulate.

Perhaps you could devise a machine for doing the work. If so, you might sell a few.

A WESTERN LOCATION

Am writing you for a little advice. I am located in the semi-arid country of southern Montana. We have cottonwood, box elder, ash, willow, lots of small patches of buckbrush, a few wild plums and choke cherries and quite a lot of dandelions.

That much for the building-up period. Then we have both yellow and white sweet clover. You understand this is all on the creek bottom, which is from a few hundred yards to half a mile or more in width. Along the creek the clover is as thick as it can stand, with some scattered over the bottoms. As the creek is very crooked, it makes quite a lot of pasture in reach of bees. There are side creeks coming in every few miles also. My idea is to locate apiaries at the mouth of these side creeks.

How many stands do you think I could keep in one place? Do you think it would be a mistake to put them close to the railroad?

Last year I had twenty hives in one place and they made 2250 pounds. Three of these were three-pound packages. Am ordering three-pound packages from California and putting them in Modified Dadant hives.
MONTANA.

Answer—Judging by your description, I would say that you ought to be able to make a hundred colonies in each location profitable. I do not think the vicinity of the railroad would have any injurious effect on them. Place them as near as possible to the largest clover fields, and do not put apiaries closer together than three or four miles.

It seems to me that you have an excellent locality for honey production.

GRADING HONEY

1. I experience difficulty in getting my honey uniform in quality and color. The first honey extracted will have a slight golden color due to dandelion, the bulk of it light clover, and the last part of crop slightly darker, from buckwheat or fall flowers. I have two 500-pound tanks which I used last year while extracting 16,000 pounds of honey. I expect to produce a carload next year, and have been wondering if I should keep each grade separate or plan on blending it all together.

2. Would a car be harder to sell if it consisted of three different kinds of honey?

3. When a colony is at its peak in strength, and combs have to be raised to prevent swarming, how would this plan for increasing strike you? Brush bees from combs raised, place a piece of screen on top of extracting supers, and on top of this screen place a super containing frames of brood only. The heat from colony below would keep brood warm. In a few days this super of young bees could be given a young queen and put on a hive stand by itself. With this system none of the active field workers would be taken from the mother hive, and no decrease in honey production should result. I plan on trying this out next summer. Please criticize.
SOUTH DAKOTA.

Answer—1 and 2. We have sold honey in carloads only two or three times, because we have always kept a goodly number of wholesale and retail customers, so that it was not necessary to sell in carloads. Of course, we kept our customers informed of the kind of honey we offered them. Some want clover, others darker honey. It is the same about granulated honey; some don't like it because they imagine it has sugar in it, although our customers are generally well informed on this point. But if we were to sell honey in carloads, we would probably think it best to blend it. In that case we would have to heat it a little so that it might mix well and not show streaks.

3. Your suggestion as to raising the brood combs into an upper story is probably good. We never had to raise the combs out of the brood chamber, because we use a much larger brood chamber than the Langstroth, and there is much less swarming with the Dadant hive than with the eight- or ten-frame Langstroth. Under your circumstances the method you suggest would probably work well. You must judge of the advisability of the method by the weather you have in your locality.

NEGLECTED INSPECTION

I understand there is a state bee inspector, but he never calls to see if the bees are all right. I have about thirty bee stands, and I think if the state has a man for inspector and he gets pay he should come and see if there is foulbrood. If he does not come around, it will be of no use for me to subscribe for the Bee Journal. Just now is the time to look after these things.
ILLINOIS.

Answer—The state bee inspector of Illinois is A. L. Kildow, Putnam, Illinois. If you want him to examine your bees, write to him. He has some state funds for this, but is not paid sufficiently to go and examine every colony of bees in the state, which would require probably a dozen or more inspectors.

You see, if we did not publish a bee magazine there would b no way for you to find out how you can get your bees inspected.

HONEY TREES

Will you please give me the names of some trees that are honey producing? Also if they would grow in this country and produce a good-flavored honey? TEXAS.

Answer—Basswood is one of the best trees for honey. Its honey is of good quality. But mesquite, hackberry, huajillo, catsclaw and a number of other Texas trees are good.

I do not believe that it would be advisable to plant northern trees in Texas, owing to the great difference in climate. Besides, there are no trees yielding as much as those of Texas.

Get information from your local men concerning your particular region and plant such trees as will do well there. There are many good honey-producing trees there.

NORTH DAKOTA LOCATION

I am contemplating going into the bee business, starting with between 200 and 250 colonies. In going into this business, the location is a very important factor. I have some experience with bees in this territory, but for some time have been thinking about North Dakota. Do you consider the location as between Idaho and North Dakota of enough difference to justify my locating in the latter state? Any information you can give me regarding location, etc., will be appreciated. IDAHO.

Answer—Idaho is a very irregular state for bees, owing to its irregular constitution. You appear to me to be in a very good section.

North Dakota, on the other hand, is very regular, as it is a country of plains, with pretty general cultivation of sweet clover. But it is a very cold country and not very good to winter bees, except in the cellar.

Personally, I would prefer your part of Idaho, as it is a more endurable climate. But for a choice of location, I believe it would be well for you to make a personal visit to the spots you wish to know about, especially to see whether there is not some beekeeper established there.

REQUEENING AN OUTYARD

I have twenty-five colonies of bees sixty miles from here. They are hybrids. Do you think if I graft some queen-cells and on the ninth day take two-frame nucleus and frames with queen-cells in a small hive to my place and keep them over that night, the bees would destroy the cells? I have some Italians here I could graft from.

2. Will nine frames in a ten-frame hive have as much honey as ten frames?
LOUISIANA.

Answer—1. If you produce queen-cells in your apiary on the ninth day, you should destroy as many queens as you have cells to replace them; then on the tenth day you can introduce those cells as you propose, in the hives made queenless the day before. It is practically a success in every instance.

2. Nine frames of comb in a ten-frame

hive, if they are properly spaced, will hold fully as much honey as ten frames, because the combs are made thicker by the bees. Many people use only nine combs in hives that are built so as to give only 1⅜ inches of space. Bees do better in hives with the spacing 1½ inches. So we make our ten-frame hives 15 inches wide inside. But most of the ten-frame hives are made only 13¾ inches inside.

CLIMATE AND QUEENS

Would you please advise me from which direction, or rather from what climate, it is best to buy queens for requeening purposes?

I want to requeen all of my bees this fall. I have always received queens from the South and East, Louisiana and Texas mostly, but I don't like these bees any too well. Then I have got queens from the East, New Jersey and Connecticut. Every queen that I got from the East went bad about May 1. Four or five became nothing but drone layers and the rest were superseded by the bees.

What I was wondering is whether I got the queens from the wrong climate, or did I just get bad queens? I dislike to have queens go wrong at that time of the year. It seems as though the queens that the bees raise from those queens turn out to be good queens, but it is so heavily wooded here that it is impossible not to get them crossed with the black bees. KANSAS.

Answer—I am under the impression that the queens you buy get damaged in the mails. We have always secured good queens from every direction, although the best have come to us direct from Italy.

I would advise you to secure a few queens in three-pound packages next spring and breed queens from those. Of course you will have some mismatings, for that happens everywhere. But you will get enough purely mated queens to keep you supplied.

A New Kellogg Display

We have received from the Kellogg Cereal Company a copy of their new counter and shop display for Kellogg Corn Flakes. This consists of a standard card background with a display of fruit, including plums, cherries, peaches, oranges, raspberries, strawberies, bananas, pineapples, apples, pears, and in the front—right in the very front, mind you—a jar of wonderful honey with a label displaying the honeybee prominently. All the fruits are in the background, but the jar of honey is in the front. Now this display has cutout corners in which can be inserted dummy boxes of Kellogg's Corn Flakes. It carries a center triangle at the top of the fruit panel bearing the words, "Kellogg's Delicious with Fruit." We have one of these in our office and have received very favorable comments from it. These large cutouts will be used quite generally.

Kellogg is always doing something new for us. Mr. Freeman, advertising manager, informs us that two or three advertisements are being built to feature honey more than ever before, with a circulation of several million. These advertisements are built around the honey thought entirely.

The Kellogg fruit display pieces mentioned above, which practically fill a dealer's window, are being placed in more than fifty thousand stores, with the jar of honey featured most prominently. Certainly this will be a great service to honey, and we are grateful again to this magnificent concern for their cooperation.

Gregor Mendel

The number of "Wallace's Farmer and Iowa Homestead" for August 2 gives a lengthy and interesting account of the life of Gregor Mendel. This man was the discoverer of what is called "Mendel's Law" of inheritance. It would take too much space to describe it here. Suffice it to say that it was Mendel who discovered that individuals in nature, whether plants or living beings, have different abilities of self-reproduction, so that in hybridizing some prove to have greater powers of reproducing themselves than others. In this way they established what are called **dominant** and **recessive** characters, the dominant showing themselves in greater number in the offspring.

Mendel was fond of bees and tried to establish the Mendelian law in races of bees. He was a monk, living at the Monastery of Brunn, in Moravia, now Czecho-Slovakia, and kept a number of hives in the garden of the monastery. It is very interesting to read of his experiments, especially those in peas, of which he grew several varieties, and showed how some of these were dominant while others were recessive, the dominant reproducing themselves in greater numbers in the hybridizing of them. Although Mendel lived only to the age of 62 and died in 1884, many of his ideas have been retained and worked upon.

When Is a Bee Not a Bee

Papa, mama and little Elsie were visiting the stock show and little Elsie seemed ill at ease.

"What is the trouble, Elsie?" asked mama.

"I want to see the bees!"

"Why, dear, this is a livestock show and there are no bees here!"

"Well, that is mighty funny, because daddy read in the paper this morning that city bees were livestock."

He most certainly did, the item dated Washington, D. C., and it informed us that the census takers had orders to list all city owned bees as livestock and to get the number of bees. He will have no trouble in convincing bee men that the little fellows are "live ones" and real good stock. It is believed that by getting the number of bees from all sources the potential production of honey can be arrived at and will be appreciated by all bee men and that the figures will be of great value to the Agricultural Department.

So be it. J. R. D.

MEETINGS AND EVENTS

Current association meetings and organization notices are published in this department each month. Secretaries and other officers of organizations who wish publicity here should make sure that notices are sent in before the fifteenth of the month preceding publication. Frequently notices are received too late for use and consequently do not appear at all.

Eleventh Annual Convention in Georgia

The eleventh annual convention of the Georgia Beekeepers' Association will meet in its birthplace, the bee supply manufacturing plant of Mr. J. J. Wilder, in Waycross, Georgia, on Wednesday, September 17.

The session will open with an address of welcome by the secretary of the Chamber of Commerce of Waycross at 10 a. m. Wednesday and close Thursday at noon with the selection of a meeting place for our next annual convention.

A good program, including a trip into the great Okefenokee Swamp, is being arranged. You are invited to come and bring your friends.

J. B. Hunter, Secretary.

Midwest Horticultural Exposition November 11 to 16

The Midwest Horticultural Exposition will be held this year at Shenandoah, Iowa, November 11 to 16. This exposition has been held every two years and is the chief midwestern exposition where beekeeping products are a prominent part of the display material. Beekeepers over the middle West should each year compete in the competitive exhibits allowable at this expositon. It is hoped that there will be a large number of entries from many of the states. More complete notice will be available next month.

Radio Talks from Ames, Iowa

A series of radio talks will be started from Ames, Iowa, from the Iowa State College, over station WOI, beginning September 19 at 1 p. m. Copies of these talks will be available to those who request them.

Licking County (Ohio) Meeting

The Licking County beekeepers held their annual picnic July 31, 1930, at J. W. Crawford's farm residence, Hanover, Ohio. There was speaking by several beekeepers of note, one especially, V. C. Stiers, of Alexandria, age 83 years.

Dinner was served at 12 o'clock noon. Basket lunch and ice cream. Officers elected: J. W. Crawford, president; M. N. Brown, vice-president; C. P. Ruff, secretary and treasurer, and Sarah M. Ruff, assistant secretary.

C. P. Ruff, Secretary.

Beekeepers' Chautauqua at Madison, Wisconsin, August 13-14

The Wisconsin beekeepers' Chautauqua was held at Madison, Wisconsin, on August 13 and 14, in charge of Prof. H. F. Wilson, of the University of Wisconsin. The principal speakers were H. F. Wilson, Lewis Parks, M. C. Berry, E. R. Root, James I. Hambleton, C. D. Adams, James Gwin, C. W. Aeppler, F. B. Paddock, O. A. Lende, L. C. Dadant, and Mrs. Day, of the Kellogg Company. The very interesting program included a demonstration by Mrs. Day, of the Kellogg Company, who is assistant to Miss Barber and certainly did herself as well as her company great credit.

One of the interesting parts of the meeting was a visit to the Dr. Miller Memorial Library. Some of the most outstanding volumes of the library were exhibited on the study tables of the University of Wisconsin library room. Prof. Wilson has certainly done a wonderful work in accumulating such a large amount of material for this very important library. It is the intention of the American Bee Journal at some early date to give to the beekeepers information relative to the work that has been and is being done in accumulation of material for this library.

After the two days' meeting, a picnic dinner and field meet were held at Vilas Park, where about seventy-five beekeepers sat down to a most enjoyable luncheon. It is certain that Wisconsin beekeepers know how to entertain their friends

North Dakota Summer Meeting

More than fifty beekeepers from six states attended the summer meeting of the North Dakota Beekeepers' Association at Carrington on July 18. W. F. Boylan, president of the organization, is also mayor of Carrington, and it was he who welcomed the bee men to his town. The response was by W. W. Remington, former president, who mentioned the fact that the German tariff made it necessary for us to find a home market for our product.

Sam F. Lawrence made a very practical talk on the need of better queens and stressed the importance of line breeding to establish desirable traits. He was followed by Frank C. Pellett, of the American Bee Journal, who talked on the honey sources of the Northwest.

The Kinwanis Club entertained the bee men at a delightful noonday luncheon accompanied by music, and an address by the president of the club and one by Hon. J. A. Kitchen, commissioner of agriculture.

The afternoon was featured by a report of the League convention by Ralph Smith, president of the Mountain States Association. Secretary J. A. Munro presented a plan of affiliation with the North and South Dakota horticultural societies whereby all will use a joint publication and secure full benefits of all the combined membership. This received favorable action.

C. S. Engle talked on management for extracted honey production, outlining the essentials for success in the sweet clover region. There was much interest in two branches of a cherry tree from the orchard of George Gregg, of Garrison. One of the branches was loaded with fruit, while the other, from which the bees had been excluded by screens, had only about a half dozen cherries, thus proving the value of the insects in securing pollination.

Kansas Federation

The Kansas Federation of Beekeepers' Associations met June 1 at the residence of F. Dean, of Topeka, Kansas. This meeting consisted of a gathering of delegates from the different associations of the state. Mrs. Kathleen Williams was elected temporary president and R. L. Parker temporary secretary. By-laws were drawn up and adopted providing that the delegates meet twice a year, once in summer and once in winter, the winter meeting to be held at Manhattan during Farm and Home Week. Each delegate has one vote and each association one delegate. Officers elected for the year are: O. A. Keene, Topeka, president; J. F. Rule, Parsons, vice-president; and Kathleen Williams, Burlington, secretary.

A. V. Small, of Augusta, explained the operation of an organization in the Arkansas Valley which sells cooperatively by keeping each member in close touch with the current market prices. It is a group of only five men, each having deposited $25.00 and agreeing to report truthfully market information gathered, to give selling prices and other information to a central office. This information is then distributed to the five members by a secretary. For two years the plan has worked well, and it is hoped that the number of members will increase. Mr. Small suggested that each association organize a marketing group of this sort.

A motion was also made by Mr. Small and carried that Dr. Parker

(Continued on page 459)

More Adventures of the Bee Fairies

By Aunt Laura

Synopsis: Four children with their aunt, who is a beekeeper, are changed into bee fairy children and allowed to visit the bees. Today they enjoy a treasure hunt.

* * *

Chapter 8

ONCE more the bee fairy children found themselves carried through the clear summer by strong, swift wings, following their friendly guide. They noticed that the rest of the party, Yellow Band, Velvet, and Imp, had one by one left them, so as Robert asked Fleet Wing a question they flew close to hear her reply.

"Why didn't you ask Flighty where she got her preserves?"

Fleet Wing laughed. "That is not our custom, my dear. Flighty did her part when she came in bragging about her find. It was up to the rest of us to hunt for ourselves."

"But it would have saved time," argued Robert.

"Yes, maybe, but you must always try to keep in mind that time is not the important thing with us. The important thing with bees is: Are we doing the work our Heavenly Father planned for us — fertilizing flowers so they can produce seed or fruit."

"But peach preserves aren't flowers," suggested Dickey.

"No, my dear, but peach preserves are sweet, and, while we prefer nectar, occasionally we use other sweets as well."

"And why did Velvet and Yellow Band and the rest go off by themselves?" inquired Robert.

"To hunt for themselves," replied Fleet Wing. "That is another of our laws. You see our Heavenly Father knew every flower, far and wide, must be visited, and if we bees only hunted the source of what some other bee brought in, many flowers would be neglected, so He in His great wisdom put it into our hearts to each hunt for her own nectar. When someone brings in a load of treasure it is whispered about and those who can be spared start out, hunting here, there, anywhere, to find some themselves. It may be we find the same sort of treasure; it may be another sort. It may be close at hand or it may be far, far away, but it is our own contribution to the family stores."

"Why is it," asked thoughtful Mildred, "that some flowers close to the beehive or right in the bee lot seem to be hardly ever visited and those a long way off, perhaps as far away as the city park, are visited often?"

"That is another of the wise provisions of our Heavenly Father," answered Fleet Wing. "Whether a flower is at the very entrance of our own home or two or three or maybe more miles away, it stands its equal chance of being visited by us, and while we pollenize it we are rewarded by its nectar. Now shall we wander about until we find nectar, or shall we hunt for peach preserves?"

"Oh, let's hunt for the preserves," cried the children, rememberig such delicacy of old. "It sounds so interesting and exciting."

"Very well," replied Fleet Wing, "preserves it is. There are several places where one can usually find some sweet goodies; for instance, the community playground just at the edge of town. These town children eat their lunches there and often scatter bits of candy or jelly or sweeties about. We'll go there first."

So away they flew, past the pretty farms and over the suburban homes, to the playgrounds, but no treasure did they find. Once or twice they were tempted by gay posy beds or fields of wild blossoms to linger, and once they stopped to inspect the fruits on a peddler's cart, where, of course, they failed to find the coveted peach preserves.

"You understand," remarked Fleet Wing, as they continued their journey, "we bees always greatly prefer nectar, but at times we cannot find any, which sometimes makes us very cross. For instance, during a shower, all of the nectar may be washed off the blossoms. Then, too, some flowers only secrete nectar in the afternoon; others only in the very early morning. Sometimes we are guided by sight, sometimes by smell. Sometimes we take our treasure from other hives where the bees are silly enough to leave a bit unprotected, and occasionally we find a bit of honey in a deserted hive; but always we like nectar if we can get it."

Then with a gay little laugh and a merry twinkle of the eyes, Fleet Wing turned to Aunt Laura. "Or we have even been known to try to carry off honey that our dear bee lady had laid away in the house for herself. I heard of such a time not long ago, when she was bottling some honey. It smelled so very, very delicious that we thought surely we must help ourselves to it even though we knew every window of her house is most carefully screened and every cervice stopped up."

Aunt Laura laughed. "Not every crevice, Fleet Wing."

"Oh, ho, we know what you mean," cried one of the children. "We heard about that. You told us, Auntie dear, about the time you kept wondering where in the world the bees got in, and you kept wondering and wondering until you found some bees all sooty!"

Fleet Wing laughed. "Sooty! I say they were. It was a good joke on all of us. Blunder and Buzz came home in a great flurry, all covered with soot, which is against one of our most important laws—neatness and cleanliness. They did look so comical, and after no end of coaxing they finally told us a gay tale of their adventures—how, as they were hunting for a way to get that honey, they just happened to fly over the chimney, and down they slipped, filled their honey sacs and returned home with it. But, dear, dear, when they went back for a second load our bee lady had put a stop to their mischief."

"How did you stop it?" cried the children, turning to Aunt Laura.

"A bit of shavings and a few newspapers burned on the hearthstone convinced the bees they preferred honest to goodness nectar to my supply of honey," replied Aunt Laura.

"They were something like Santa Claus, weren't they?" laughed Doris May, "only he takes a load down, and they brought one up."

"Can't they get down the chimney any more?" asked Mildred.

"No," replied Fleet Wing; "your Aunt Laura had the hired man fasten a screen over its top."

"Naughy, naughty Aunt Laura," giggled Doris May. "You should be ashamed of yourself."

Just here Mildred spoke. "Do you reckon Mrs. Adams is making peach preserves today? She got grandmother's recipe over the phone last night. I heard her."

"Grandmother made some herself yesterday. We helped her, didn't we?

But of course it could not be her," replied Robert.

"Why, she's drying them in the sun room today," spoke up Dickey. "I saw them when I ran in just after breakfast. I don't know why I never thought of that."

Fleet Wing nodded. "We'll just take a look at your grandma's sun room."

"But it's screened, all new. Grandad and the hired man put on all new wire screen just this spring, and you know grandma never has a fly or bee in her house," exclaimed Mildred.

"I know that," replied Fleet Wing, "but come on. If there are peach preserves there, maybe we can find a way to get our share.

"Yes, yes," cried the children, "let's go and see."

So, turning, they hastened toward grandmother's house, nestling among the trees. Straight to the sun room they flew. Carefully they surveyed each window, each door. Never were nicer, neater, more effective screens anywhere, for grandfather and the hired man, supervised by grandma, never did such things half way.

The bee fairy children searched diligently all over the new wire screening. They circled around the house; they even flew over the chimneys. Then back to the sun room they went. Not an opening was to be found. Within, on the neat, old-fashioned table, in the shallow glass dishes, were the beautiful peach preserves, gloriously rich and golden in the warm sunshine. Grandma was nowhere in sight. The summer breeze stirred the grape leaves and a huge, gayly colored butterfly poised over the delphiniums.

The bee fairy children clustered outside the screen, watching and listening intently. Then came a heavy step on the gravel and Elliot, the hired man, appeared, a basket of eggs in his hand.

"Wait here," cried Fleet Wing. "I'll be back."

Breathlessly the bee fairy children waited. They heard Elliot's big voice and grandma's low, gentle tones. Then the screen door slammed. Another moment of silence! How very deliciously appetizing, how tempting were those peach preserves! As human children, peach preserves made with honey and spread on grandma's home-made bread was the most wonderful of between-meal lunches, but now as bee fairies they felt they simply **must** have some! But how? Once more they buzzed energetically over the screen. How very strong, how decidedly secure it was! Then a voice — a jolly bee voice — called them.

"Ho, ho, everybody! I'll get 'em," cried Fleet Wing as she flew from the cool, darkened dining room. "When that noisy man held the back screen door open I popped in. Now I'll eat as fast as I can, and you, each of you, reach in your tongue and drink it up when I offer it to you."

So Fleet Wing sipped the syrup from the coveted peach preserves and, filling her honey sac, she flew to the inside of the screen. There, spreading out her mandibles, she forced the syrup from her honey sac into a drop on them. Then the others, by sticking their tongues through the screen, drew it into their own honey sacs.

"I never knew peach preserves were so good," cried Robert.

Trip after trip was made from table to screen, but it was slow work. Distinctly they could hear Elliot's big voice and grandma's gentle, indistinct reply. Then Robert had an idea.

"Say, look here," he cried, "when old Elliot comes out, why can't I come in and help you eat?"

"For once your eating would help the rest of us," giggled Mildred as she waited her turn to sip from Fleet Wing's mouth.

So it was agreed, and Robert, watching his chance at the kitchen door screen, slipped over grandma's head and flew through the kitchen and dining room, so familiar to him when as a noisy little boy he played there. Joining Fleet Wing on the edge of the preserve dishes, he began helping her in the task of carrying the treasure to their partners without.

With a boldness born of enthusiasm, the bee fairies there were almost ready to carry their plunder to the hive, to return for another load, when grandmother appeared at the dining room door.

"Dear, dear, there are some bees. How ever did they get in?"

"Oh, oh!" cried Dickey, "she's caught them."

"What will they do?" gasped Doris May.

"She'll just put them out the way she always does," whispered Mildred, glad in her heart that grandma never hurt or was unkind to any living thing.

Carefully grandma slipped a tumbler over naughty Fleet Wing and patiently waited until the bee was within. Then slipping the corner of her apron over the glass, she took it to the kitchen door and bade her run along and not come back.

Fleet Wing rested a bit on the morning-glories there until Robert, without waiting for grandma to catch him, flew to the kitchen screen and was also put out. Then the two joined the rest of the raiding party and returned to the hive triumphant with their heavy loads of peach preserves to add to the family stores.

(Other adventures will be told in our next chapter.)

Doings in the Northwest

By N. N. Dodge

Bees Help Make Apples Ordered Half Way Round World

An order for forty carloads of Northwest apples, 1930 crop, was recently telephoned half way around the world. The conversation was carried on between Mr. Sam Burch, of the United Kingdom Stores, who was in London, England, and Mr. Frank Stubbs, apple dealer in Yakima, Washington. The order was placed for Jonathan, Winesap, and Newton apples, and Winter Nelis pears. The part played by bees in pollenizing apple and pear blossoms made possible the acceptance of the order, for weather conditions were favorable for the bees to be out during the blossom period last spring. In consequence, Yakima fruit growers will enjoy heavy yields of apples and pears this season.

— o —

Fireweed Promises Normal Crop

Although definite reports are not yet available, a normal crop of fireweed honey is expected from the coastal region where this plant flourishes. Warm days, cool nights, and the absence of cloudy or rainy weather have provided ideal conditions for the honeyflow and for bees to work. Mr. Lewis White, of Keasey, Oregon, states that fireweed has been yielding heavily at the higher altitudes, but on the lower slopes the flow is strong only in places where the soil is moist. Heavy consumption of stores during the cold, wet weather which prevailed during the building-up period paved the way for sacbrood, which has been prevalent throughout western Oregon. Many colonies have for this reason been unable to make the most of the heavy flow. Vetch has yielded heavily in the valley districts of Oregon, where that plant is meeting with the favor of many farmers. According to Miss Elizabeth Dickerson, of Woodenville, Washington, the failure of bees to gather surplus from the early spring flows brought colonies into the fireweed with empty combs. Winter stores must be left on the colonies from the yield normally taken as surplus, so that the crop will be accordingly short. Chester Brown, of North Bend, Washington, at an elevation where the flow from fireweed is several weeks later than average locations, is optimistic. The first fireweed bloom has been yielding heavily and the honey is of especially fine quality. Messrs. Bradley and Kline, of Issaquah, Washington, report 140 pounds per colony already stored. The inroads of Canadian thistle in this district, although seriously damaging the hay and grain fields, furnish the beekeepers with an additional honey plant, which is materially increasing the surplus.

— o —

Bear Likes Honey on Golf Balls

On one of the "Tom Thumb" golf courses in Los Angeles, a trained bear, known as Mr. Pronto, acts as caddy, retrieving the golf balls. Mr. Pronto draws a crowd whenever he is in action. His master experienced some difficulty in training him to chase the balls until he thought of immersing a few in honey, after which lesson the bear eagerly lumbers after anything that resembles one of the white spheres.

— o —

Alfalfa Weevil and Grasshopper Bad for Honey Plants

The alfalfa weevil and grasshoppers are becoming a menace to beekeepers in some sections of Utah. Alfalfa fields damaged by these insects fail to yield nectar. Hot, dry weather has also affected the honeyflow in parts of the intermountain region, so that yields will be spotted, according to reports from the Mountain States Honey Producers' Association. Heavy flows from alfalfa and sweet clover have been experienced in many irrigated localities where water is abundant, and colonies which weathered the unfavorable spring season have been filling supers rapidly. Reports from Colorado indicate below normal yields.

— o —

Honey Display at Wyoming Fair

Mr. William Mosteller, chairman of the state fair committee of the Wyoming Beekeepers' Association, is planning an especially fine apicultural display for the 1930 state fair, which will be held September 9-13, inclusive.

— o —

Which Are Worse, Bees or Sea Serpents?

Although bees have never shown any interest in aquatic sports, a swarm visited the East Green Lake municipal bathing beach in Seattle early one July afternoon and caused considerable commotion among the bathers. The swarm settled on a limb directly over the beach, to the consternation of timid, lightly clad youths. Beach guards were unable to deal with the situation, which threatened to depopulate the beach, but were finally able to locate a beekeeper, Mr. C. W. Bronson, who soon removed the cause of the disturbance.

— o —

Spotted Conditions in Yakima Valley

Mr. Farmer, manager of the Congdon orchards has apiaries located throughout the Yakima Valley for the purpose of pollenizing the blossoms of the fruit trees. Approximately one carload of honey is harvested each season from the Congdon apiaries. Mr. Farmer believes that an average crop will be obtained.

— o —

Less Alfalfa, Early Hay, and Spray Discourage Beekeeping

Decreasing acreage of alfalfa, earlier cutting of the hay crop, and frequent periodical spraying of the orchards are three factors which are discouraging beekeepers in the famous Yakima Valley of central Washington, according to Mr. Daniel Wurth, long-time resident and honey producer of Wapato. Mr. Wurth has kept bees in the valley for a score of years, but has finally become discouraged after a series of years of crop failures brought about by these causes. During July, Mr. Wurth spent considerable time in western Washington seeking new locations for his bees in the fireweed regions of the Cascade Mountains. He had planned to place one hundred colonies on the Pacific Slope this season, but, being unable to find relatively high altitude location where the fireweed flow did not reach its height until August, he intends to leave his bees east of the mountains until the spring of 1931. Bears, inaccessibility of the unoccupied fireweed locations, and the unreliability of the fireweed as a honey plant do not constitute as serious drawbacks, according to Mr. Wurth, as spray poisoning and rapidly decreasing pasture.

That June Cover Picture

This picture is a view of part of my apiary of sixteen colonies and honey house, July, 1929. The picture was taken by my brother, Elmer Burk, when I was getting ready to take off my honey.

One of these colonies, wintered over, actually filled nine extracting supers 6¼ inches deep. However, the tenth super, put on first for comb honey, was not filled, the foundation being only drawn out. The extracting supers all had drawn combs and are beautiful.

The remaining hives in the picture are from two-pound package bees installed the same spring on drawn combs. All of these colonies are in Modified Dadant hives and all my extracting supers are shallow Modified Dadant depth.

The picture was not taken to advertise, nor was it framed, because these are facts which really happen with the large hives in use. They are doing equally well this year as an average.

Joseph Burk, Norwalk, Iowa.

Cornering the Microbes of the Apiary—Part Four

(Continued from page 431)

honey within the hive. In the case of European foulbrood the disease is not permanent and can be reduced to a point where it causes little or no damage, and can be completely eliminated by developing strong colonies.

For specific differences of these two diseases, it is recommended that the beekeeper secure, if possible, copies of Bulletin 809, dealing with American foulbrood, and 810, European foulbrood, of the professional series of the U. S. Department of Agriculture, Washington, D. C.

A bacterial disease of adult bees has more recently been found and discussed by Mr. C. E. Burnside, of the Bee Culture Laboratory at Washington, D. C. This disease, which he calls "Septicemia of the Honeybee," is reported from all the major beekeeping sections of the United States.

Mr. Burnside reports that the first symptoms of sickness appear in about sixteen hours after bees are inoculated with the bacteria. The bees act similar to chilled bees, and just before death their movements are feeble and the bees may be found on their backs, trying to move their legs and get on their feet.

In this disease the bacteria attack the blood corpuscles and the blood changes from a pale brown color to a milky or cloudy appearance.

Arsenic or Fly Paper for Ants

As I saw in your Bee Journal of a bee man in Alabama having trouble with ants bothering his bees, I will give him a remedy that I have tried that got rid of the ants. I take some empty supers, scatter them through the bee yard. I then put some saucers in them and water with honey. Put a cover on. The bees cannot get to it. I generally get the ants working good, then I sprinkle arsenic in. I soon get rid of the ants. You have to wait till the ants work on your sweet honey and water before putting in your poison. You can use fly paper the same as for flies.

E. Edwards, Wisconsin.

Just when does the "comb honey season" end in the mind of the public?

In the early part of May, the Urma (United Retail Merchants of America) chain of thirty groceries in Springfield, Illinois, was advertising "Honey in the Comb. The Last Chance of the Season" In Chicago last July the buyer for a small local chain of food stores said the season was over the last of June.

Frank H. Madison, Illinois.

Crop and Market Report

Compiled by M. G. Dadant

For our September American Bee Journal, we asked our reporters to answer the following questions:

1. How is your crop compared to a year ago?
2. What will be the probable per colony average in your locality?
3. If crop is short, doesn't it look like 1929 prices should be maintained?
4. What are buyers offering to pay?

CROP COMPARED TO YEAR AGO

Remarkable it is that there are so few states in which the crop seems to be the equal of a year ago. In fact they could almost be named over on one hand. Connecticut seems to be better, New York about even, Louisiana much better, western Iowa at least as good, Nebraska and Kansas nearly as good, Arizona better, Montana better, southern California better, Manitoba better, Ontario as good. In practically all other locations, except perhaps the northern half of the south peninsula of Michigan and the northern peninsula, the crops seem to be smaller than a year ago.

Texas seems to be the worst hit, probably, of any state in the Union, having probably only 10 per cent of last year, which was not a bumper crop. Alabama reports almost nothing and nearly all of the other southern states similar conditions. Georgia, however, has perhaps 50 per cent of last year and Florida somewhere near the same. The southern Atlantic states similarly are hard hit.

When we come to the central western section, all of those sections which had sweet clover to rely on are going to do fairly well, although perhaps not as good as last year. Even in the drought-hit sections it is remarkable what beekeepers have done where they were surrounded by pastured sweet clover or sweet clover growing in waste places. We have one report from Illinois of 250 pounds per colony and several scattering reports of 100 pounds. This was offset, however, by a much larger number of reports giving practically no yield or a yield of from 10 to 25 pounds per colony. Wisconsin will perhaps have 75 per cent of last year and Minnesota 60 per cent, with South Dakota and North Dakota likely 60 to 80 per cent. Oklahoma crop is light, and also the same applies in most parts of New Mexico, although there are here a few conflicting reports and some large crops noted. In Colorado conditions are not flattering, nor are they in Wyoming. Neither will Utah have more than 75 per cent of the crop, whereas the same is true of Nevada. Montana appears to have done better than nearly any other of the mountain states, and Idaho may approach last year's total. In Washington the crop does not seem to be over 60 per cent of 1929. In southern California the crop is very much better than last year, although far from good yet. In central California the crop has suffered very much and northern California will not have over the equal of last year. All of these reports, of course, are made on slim yields for the balance of the season. Late rains in nearly all sections have naturally made the outlook much better and it may be that many of the states now reporting very poor conditions or less than normal may reach last year's total.

PER COLONY AVERAGE

Among the heaviest per colony average states are likely New York, Louisiana, western Iowa, north central Michigan, western Minnesota, South Dakota, Arizona, Montana, and Manitoba. In most of these states at least 100 pounds per colony is looked for, and there are a considerable number of reports showing that beekeepers in favored sections will reach 200 pounds average.

Taking the entire country, however, although conditions have perhaps somewhat improved over what they were when the August report was written, which was during the blistering hot weather, still there is no doubt but what the crop will be very much short of 1929. This is particularly true of comb honey, which can be produced usually with best results with heavy crop yields.

PRICE MAINTENANCE

In nearly all sections it was agreed that the price should be maintained at last year's figures, owing to the shortage of crop, and nearly all beekeepers who were dependent on retail sales for disposition of their honey were intending to hold to last year's prices. One or two even reported having advanced.

With the larger producer, however, there was a question as to whether the last year's price could be held even though it looked entirely justified. Early price suggestions did not seem to indicate that the price would hold up to last year, at least for a beginning price. In Canada it was suggested that perhaps one cent per pound lower price would have to be made than last year owing to the heavy carryover and the desirable crop this year. Maine seemed to be the only state reporting too much rain to give best results.

OFFERS

The August report indicated that in the neighborhood of 7½ to 8 cents f. o. b. New York had been offered for honey. There were a number of central western suggestions that comb honey had been offered in the neighborhood of $3.75 to $4.00 per case and several white extracted offers in the neighborhood of 7 to 7½ cents delivered to a central point.

One lot of offers reported was 6 cents per pound for extracted honey f. o. b. shipper's point.

In North Dakota the indication was that 7 cents at least would be asked for car lots of white sweet clover honey, with some Michigan reporters stating 8 cents as a minimum.

The bulk of the offers made so far to producers seem to be in the neighborhood of 6 to 6¾ cents for good white honey f. o. b. shipping station, with amber honey dropping as low as 4 cents per pound in some instances.

In central western areas, at least, it appears that the white clover crop is not going to be as light colored as usual, evidently from the fact of the extremely dry weather and also that bees were gathering from every source wherever available and that minor sources seem to be yielding enough to darken the clover honey. However, the honey is yet a light amber and would well pass for the usual white clover crop, but would not compete with the lighter honeys of the sweet clover and intermountain territories.

The question as to where the price on honey would stabilize this year is to depend entirely upon industrial conditions and the possibility of a demand being created by the consuming public.

This would indicate that, if conditions improve, there may be a strengthening in the honey market during the fall and winter months over the opening prices offered earlier. Comb honey undoubtedly is going to be in demand on account of a short crop.

There seems to be no doubt but that there would be considerable demand on the part of beekeepers in the stricken sections, who will have to buy honey to supply their trade. One report from Alabama was to the effect that one-half cent per pound more was being paid for honey to supply local needs than last year. This was, however, the only very flattering report.

Classified Ads That PAY

This Is Your Market Place

—where you may buy, sell or exchange at moderate cost — only 7 cents a word. Count each word of your message, including name and address. Our advertisers tell us: "IT PAYS." Send your ad for the very next issue now to reach us by the 15th. Terms: Send remittance with copy and order. Minimum ad ten words.

Only **7c** *a word*

You Sell Quicker by Telling More

Ads as small as ten words, costing only 70c, are accepted here, but our regular advertisers have demonstrated that it pays to tell more. Use enough words to thoroughly describe your offering and you'll sell quicker. Address all orders or inquiries to the Classified Advertising Department of the American Bee Journal, Hamilton, Illinois.

Will sell your Honey, Flowers, Poultry, Fruit, Pets (as rabbits, etc.) and more . . . . Is your ad here?

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

BEES AND QUEENS

CHOICE, bright Italian queens that are a pleasure to work with and you will be proud to own. Requeen with stock that has been bred and selected in the North the past twenty-seven years for good wintering; hustlers, gentle, and fine color. One queen, $1.00; dozen, $10.00. Breeders, $10. Emil W. Gutekunst, Colden, N. Y.

THANKS for your past business. Will be open for your orders on the same stand in '31 with better stock, better breeding, better service and larger holdings. If you are in the city of New Orleans in the meantime, look me up at Kenner, Louisiana. Jes Dalton, Kenner, La.

PRODUCTION-BRED Italian queens, untested, 50c each, any quantity. A. E. Crandall, Berlin, Conn.

GOLDEN Italian queens for sale, the rest of the season: One, 75c; 6, $4.00; 12, $7.50; 25 or more, 50c each. The same good honey gatherers that are giving satisfaction all over the U. S. and Canada. They will please you. E. A. Simmons Apiaries, Greenville, Ala.

IF you want gentle bees, good honey gatherers and beautiful to look at, my strain of golden Italians will please you. Prices, July to November: One untested, 90c; six, $4.80; twelve to forty-nine, each, 70c; fifty or more, each, 65c. Tested, each, $1.25. Circular on request. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

IMPROVE your stock and insure a crop. Besides holding Indiana state comb honey production records for ten successive years, these gentle, scientifically line-bred Italian queens "WIN AGAIN," having the longest tongues in competition with twenty other strains.

	1 to 25	25-50	50-100
Untested	$1.25	$1.15	$1.00
Select tested	2.50	Breeders $10 each	

Honeyville Queen Apiary, Route 1, Foothill Blvd., east of Monrovia, Calif. Visitors welcome.

I AM offering my select golden Italian queens for the balance of season (untested), any number, 50c each; tested, $1.00 each. I guarantee these queens to be as good as money can buy or your money back. E. F. Day, Honoraville, Ala.

GOLDEN Italian queens producing golden bees. Good honey gatherers, not bad to swarm. State inspected. Satisfaction guaranteed. Tested, $1.25; select tested, $2.25. Untested, 90c each; six, $4.80; twelve or more, 70c each. Select untested, $1.00. D. T. Gaster, R. 2, Randleman, N. C.

SEPTEMBER special price on our golden Italian queens. Producing large, beautiful bees. Solid yellow to tip. Select untested, $1.00 each. Dr. White Bee Co., Sandia, Texas.

BUY your queens from Allen Latham, Norwichtown, Conn.

GOLDENS—Solid yellow to tip, select untested, $1.00; six for $5.00. Satisfaction guaranteed. H. G. Karns, Green Bay, Va., Route 1.

REQUEEN with hardy northern Iobred Italians; 60c each until September 20. Charles L. Ruschill, Colfax, Iowa.

FOR SALE

FOR SALE—100 colonies bees in painted hives, with full sheets wired foundation. No disease. Price of hives and foundation only asked. L. L. Ferebee, Pineland, S. C.

FOR SALE CHEAP—750 colonies bees with modern equipment. Good location. No disease. Law practice demands my time. N. L. Stapleton, Colquitt, Ga.

FOR SALE—Complete apiary and equipment, including 260 colonies, winter and summer locations, extracting house, trailer, many extras in supers, frames, etc. No disease. Bargain at $2,000. Going to college; need the money. J. E. Hastings, Mesa, Arizona.

FOR SALE—In sunny California, 100 colonies of bees and all equipment, or will trade for real estate in or near Iowa. J. B. Hohmann, Stony Ford, Calif.

HONEY FOR SALE

NEW CROP—Clover honey. Comb honey, cellophane wrapped; extracted, 60-pound containers. Write for quotations. State quantity wanted. M. Larson & Son, Gardner, Ill.

WHITE CLOVER — Comb honey, packed eight cases to carrier. C. J. Schwind, Route 3, Belvidere, Ill.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

COMB, extracted and chunk honey in ten sizes glass containers and 2½-, 5-, 10- and 60-pound tins. Livest labels in U. S. or plain. One of our special display cases with $25 and $50 orders. Write for free illustrated circular showing our packages and free samples of honey. Griswold Honey Company, Madison, O., U. S. A.

HONEY FOR SALE—All grades, and quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

WHITE CLOVER comb honey, packed eight cases to carrier. W. L. Ritter, Genoa, Ill., DeKalb County.

FOR SALE—Extra choice white clover honey, case or carload; also amber. David Running, Filion, Mich.

NEW clover honey in 60-lb. cans, two cans to the case, $11.00 per case. Samuel Miller, P. O. Box 250, Carlisle, Pa.

STURDEVANT'S CLOVER HONEY — St. Paul, Neb. Any quantity.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Illinois.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

HONEY FOR SALE—White and amber honey in 60-lb., 10-lb. and 5-lb. tins. Write for prices.
Dadant & Sons, Hamilton, Illinois.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE Clover extracted honey. Write for prices and samples. Kalona Honey Co., Kalona, Iowa.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Delicious palmetto honey in barrels; also heavy bodied amber. P. W. Sowinski, Fort Pierce, Fla.

CHOICE lots white clover, sweet clover, light amber and buckwheat in any amount. State quantity wanted when writing. A. I. Root Company of Chicago, 224-230 West Huron, St., Chicago, Ill.

FOR SALE—Would like bid on carload of 50,000 pounds sweet clover honey, ready for delivery about Oct. 1. M. W. Thompson, Toronto, S. Dak.

HEAVY BODIED water-white sweet clover honey in case or car lots. Sample 10c. C. S. Engle, 1610 Fourth Ave. South, Fargo, N. Dak.

FOR SALE—White clover honey. None finer. Write for prices. Fred Leininger & Son, Delphos, Ohio.

EXTRACTED clover-basswood honey in new cans and cases; fine quality light amber, carload or less. Sample on request. Roger Lane, Trumansburg, N. Y.

HONEY AND BEESWAX WANTED

SUPPLIES

MISCELLANEOUS

Meetings and Events

(Continued from page 451)

draft a new apiary law to inclule a petition, signed by the secretary of each association, with a list of the number of colonies and the value of products produced by each beekeeper.

Illinois Beekeepers' Tour

The annual Illinois State Beekeepers' Association tour this year, August 6, 7, and 8, was in combination with the annual tour of the Illinois State Horticultural Society and started at the Hyde Brothers' apiaries, New Canton, Illinois. Hyde Brothers are probably the second largest beekeepers in Illinois, having about seven or eight hundred colonies, situated in typical Illinois locations in the hilly country around New Canton. Everybody on the tour is satisfied that the Hydes know their bees.

Joining in with the fruit men, the tour went through various commercial orchards around Pittsfield and Griggsville, terminating at noon of the second day, Thursday, August 7, with a dinner in the high school gymnasium at Griggsville, where G. H. Cale, the Associate Editor of the American Bee Journal, gave a talk to the fruit men on bees in orchards for pollination purposes; a talk well received and showing considerable interest on the part of the two hundred fruit men gathered in this new story, which is of mutual interest to both beekeeper and fruit grower.

The beekeepers' tour then continued throughout Thursday and Friday, down through Jersey County, visiting the apiary of Mr. Brokaw at Pleasant Valley, and ending at the flower, nut and bee farm of the Riehl's, just above Alton, on Friday afternoon.

Although the number of beekeepers visited this year was rather small, the association of fruit growers and bee men had much in its favor, and it is hoped that tours in the future will be so arranged that the fruit men may also visit some of the commercial apiaries and the program of the two associations be more closely related.

Annual Meeting of Texas Association

At the recent meeting of Texas Beekeepers' Association, the thirty-sixth meeting, at College Station, W. O. Victor, who has attended every meeting, opened the program with a review of the history of beekeeping in Texas, with special reference to the part which he has played in this industry. He traced the development of beekeeping from east Texas, through the Brozos River Valley and on to the commercial district of southwest Texas, giving incidents relative to many famous beekeepers of the past.

Dr. A. C. LaMay, of the State Board of Health, complimented the beekeepers on the stand which they had taken in defense of the pure food laws. He explained the regulations governing the labeling and sale of foods by the Texas laws. He promised to continue the cooperation of the past year with the legal committee of the beekeepers' association and gave definite instructions for the gathering of evidence for cases of supposed infringement of the law.

A. W. Bulay, of Livingston, Texas, gave an interesting description of the sale of honey in east Texas, in which he was ably assisted by Mrs. Bulay, who has been the honey salesman of the family. Much of the Bulay product is marketed as chunk honey in glass.

The keynote of the entire program was cooperation. Whitman Coffey, of Kyle, Texas, reviewed the present

situation and made definite statements as to why beekeepers should cooperate and why they do not cooperate.

Dr. Paulson, of the experiment station, in a talk on the fundamentals of cooperative marketing, reviewed the attempts of beekeepers to organize in Texas, and he explained what would be necessary for cooperation. He reviewed the experiences of many cooperatives that have come into existence and disappeared because they ignored certain principles or have enjoyed prosperity because they followed the laws to the letter.

Other speakers on the program were E. G LeStourgeon, W. E. Joor, Miss Ima Graham, A. M. Patterson, J. V. Armond; Cecil Heard, chief inspector; W. M. Whitney, assistant inspector; E. W. Cotheran, Roxton; H. B. Parks, T. W. Burleson, H. A. Victor, Roy Weaver, Dr. Warren Whitcomb, Jr., of the United States Field Laboratory, Baton Rouge, Louisiana.

Dr. Whitcomb told of standardization and shipping of bees in combless packages to the North, advising the adoption of a proposed standard package. This was done and members agreed to begin with the new whenever the old packages were exhausted. Several reported already using the new size.

The secretary was instructed to attend the meeting of the Southern States Conference and attempt to form a Southern Association of Queen Breeders and Package Dealers. The officers of the organization are: W. O. Victor, Uvalde, president; H. E. Coffey, Whitsett, secretary-treasurer.

New officers of the state association are A. W. Bulay, Livingston, president; Edward Burleson, vice-president; H. B. Parks, San Antonio, secretary-treasurer.

H. B. Parks,
San Antonio, Texas.

Utah Crop Lige

It looks as though the honey crop in Utah will be light this year, except for a heavy harvest in the Uintah Basin, according to T. L. Ball, president of the Association and superintendent of the Superior Honey Company. The light crop is due to the drought. Dan H. Hill, state inspector, states reports of conditions of apiaries about normal. G. P.

Slow Down the Band Wagon!

(Continued from page 426)

ever their financing of it and the consistency of their leaders show them ready to receive and operate it for the good of the whole industry.

"There is nothing wrong with American beekeeping. It is as sound as any agricultural industry—sounder

than many. That there can be unanimity of opinion is shown quite clearly in the concerted action during the last few months to support the pure food law. There are those, however, who cannot see why purity of beeswax is not as important as purity of honey," say a surprising number of those interviewed.

An opportunity to study the psychology evident in the honey producers' support of the pure food law and to apply it to other worthy beekeeping projects needing mass opinion and action is available to some leader who will be the Moses to lead us out of the "wilderness." However, he wants to be sure credit is given accurately and faithfully to those who work and not attempt to take the most of it undeservedly. One might say: Be patient with those who really try. Help them. Soften the voice of criticism, and if you prefer to stand on the sidelines, as many of us do, at least root for the "home team" first, last and all the time.

Is there anything seriously wrong with American beekeeping? Not a thing that cannot be remedied by teamwork, interchange of information, recognizing the agreed majority and helping them to plan sanely the projects which will really be followed through to financial and moral success for beekeeping. We are like a slow circus parade—outdistanced by the band wagon.

Slow down the band wagon! The elephants can't keep up!

North Carolina Beekeepers Have a "Rum" Problem

Beekeepers of western North Carolina, according to an Associated Press dispatch, have their own rum problem. Beekeepers estimate that mash from moonshine stills kills bees by the wholesale. The sugar used in the manufacture of the moonshine attracts hordes of bees.

R. Craig Blean, of Black Mountain, North Carolina, and A. K. Queen, of Chandler, both report the loss of bees from this source.

L. D. Bray, South Carolina.

Traffic Disrupted When Army of Bees Get Loose

This is the title of a newspaper clipping from Winston-Salem, North Carolina, sent to us by L. E. Webb, of Morganton. It concerns a truck driver at Winston-Salem when his trailer and car were forced off the road with a load of eighty colonies of bees, which, the clipping goes on to say, "soon sought new homes when their workshops were suddenly shaken to pieces."

This is an unfortunate incident which will bring memories to many of our readers.